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May 15, 2002

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
Attn: Mr. Robert Clark (Mail Stop O-8-E9)
Project Directorate I-1

Subject: Revision to Emergency Plan Implementing Procedures
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Gentlemen:

In accordance with 10 CFR 50.4(b)(5), enclosed are revisions to Ginna Station Emergency Plan Implementing Procedures (EPIP).

We have determined, per the requirements of 10 CFR 50.54(q), that these procedure changes do not decrease the effectiveness of our Nuclear Emergency Response Plan.

Very truly yours,

Richard J Watts

Richard J. Watts
Manager, Nuclear Training Department

Enclosures

xc: USNRC Region 1 (2 copies of letter and 2 copies of each procedure)
Resident Inspector, Ginna Station (1 copy of letter and 1 copy of each procedure)
RG&E Nuclear Safety and Licensing (1 copy of letter)
Dr. Robert C. Mecredy (2 copies of letter only)

PSP/jtw

A045

PROCEDURE	REVISION NUMBER
EPIP 1-0	28
EPIP 1-11	26
EPIP 2-5	14
EPIP 2-9	5
EPIP 2-11	19
EPIP 2-12	22
EPIP 2-18	14

REPORT NO. 01
REPORT: NPSP0200
DOC TYPE: PREPIP

GINNA NUCLEAR POWER PLANT
PROCEDURES INDEX
EMERGENCY PLAN IMPLEMENTING PROCEDURE

PARAMETERS: DOC TYPES - PREPIP STATUS: EF 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-1-0	GINNA STATION EVENT EVALUATION AND CLASSIFICATION	028	05/15/02	05/15/02	05/15/07	EF
EPIP-1-1	UNUSUAL EVENT	003	11/02/01	11/02/01	11/02/06	EF
EPIP-1-2	ALERT	004	11/02/01	11/02/01	11/02/06	EF
EPIP-1-3	SITE AREA EMERGENCY	005	12/09/96	01/23/98	01/20/03	EF
EPIP-1-4	GENERAL EMERGENCY	005	11/02/01	11/02/01	11/02/06	EF
EPIP-1-5	NOTIFICATIONS	049	04/10/02	04/10/02	04/10/07	EF
EPIP-1-6	SITE EVACUATION	013	12/20/01	12/20/01	12/20/06	EF
EPIP-1-7	ACCOUNTABILITY OF PERSONNEL	009	11/02/01	11/02/01	11/02/06	EF
EPIP-1-8	SEARCH AND RESCUE OPERATION	005	12/20/01	12/20/01	12/20/06	EF
EPIP-1-9	TECHNICAL SUPPORT CENTER ACTIVATION	021	12/20/01	12/20/01	12/20/06	EF
EPIP-1-10	OPERATIONAL SUPPORT CENTER (OSC) ACTIVATION	010	07/25/00	07/25/00	07/25/05	EF
EPIP-1-11	SURVEY CENTER ACTIVATION	026	05/15/02	05/15/02	05/15/07	EF
EPIP-1-12	REPAIR AND CORRECTIVE ACTION GUIDELINES DURING EMERGENCY SITUATIONS	009	12/20/01	12/20/01	12/20/06	EF
EPIP-1-13	LOCAL RADIATION EMERGENCY	003	08/04/95	01/23/98	01/23/03	EF
EPIP-1-15	USE OF THE HEALTH PHYSICS NETWORK HPN	005	04/24/96	03/03/99	03/03/04	EF
EPIP-1-16	RADIOACTIVE LIQUID RELEASE TO LAKE ONTARIO OR DEER CREEK	004	02/13/98	02/13/98	02/13/03	EF
EPIP-1-17	PLANNING FOR ADVERSE WEATHER	002	06/21/00	06/21/00	06/21/05	EF
EPIP-1-18	DISCRETIONARY ACTIONS FOR EMERGENCY CONDITIONS	002	04/24/02	04/24/02	04/24/07	EF
EPIP-2-1	PROTECTIVE ACTION RECOMMENDATIONS	019	06/04/01	06/04/01	06/04/06	EF
EPIP-2-2	OBTAINING METEOROLOGICAL DATA AND FORECASTS AND THEIR USE IN EMERGENCY DOSE ASSESSMENT	011	09/28/01	09/28/01	09/28/06	EF
EPIP-2-3	EMERGENCY RELEASE RATE DETERMINATION	014	09/28/01	09/28/01	09/28/06	EF
EPIP-2-4	EMERGENCY DOSE PROJECTIONS - MANUAL METHOD	013	07/20/01	07/20/01	07/20/06	EF
EPIP-2-6	EMERGENCY DOSE PROJECTIONS - MIDAS PROGRAM	011	06/21/00	06/21/00	06/21/05	EF
EPIP-2-7	MANAGEMENT OF EMERGENCY SURVEY TEAMS	010	10/23/00	10/23/00	10/23/05	EF

PARAMETERS: DOC TYPES - PREPIP STATUS: EF 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-2-8	VOLUNTARY ACCEPTANCE OF EMERGENCY RADIATION EXPOSURE	005	05/16/00	05/16/00	05/16/05	EF
EPIP-2-9	ADMINISTRATION OF POTASSIUM IODIDE (KI)	005	05/15/02	05/15/02	05/06/07	EF
EPIP-2-10	INPLANT RADIATION SURVEYS	003	01/16/97	01/16/97	01/16/02	EF
EPIP-2-11	ONSITE SURVEYS	019	05/15/02	05/15/02	05/15/07	EF
EPIP-2-12	OFFSITE SURVEYS	022	05/15/02	05/15/02	05/15/07	EF
EPIP-2-13	IODINE AND PARTICULATE ACTIVITY DETERMINATION FROM AIR SAMPLES	008	07/27/99	07/27/99	07/27/04	EF
EPIP-2-14	POST PLUME ENVIRONMENTAL SAMPLING	014	12/04/00	12/04/00	12/04/05	EF
EPIP-2-15	POST PLUME EVALUATION OF OFFSITE DOSES DUE TO DEPOSITION	005	02/06/02	02/06/02	02/06/07	EF
EPIP-2-16	CORE DAMAGE ESTIMATION	011	08/31/01	08/31/01	08/31/06	EF
EPIP-2-17	HYPOTHETICAL (PRE-RELEASE) DOSE ESTIMATES	007	03/01/02	03/01/02	03/01/07	EF
EPIP-2-18	CONTROL ROOM DOSE ASSESSMENT	014	05/15/02	05/15/02	05/15/02	EF
EPIP-3-1	EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION AND OPERATIONS	017	08/31/01	08/31/01	08/31/06	EF
EPIP-3-2	ENGINEERING SUPPORT CENTER (ESC)	009	03/12/01	03/12/01	03/12/06	EF
EPIP-3-3	IMMEDIATE ENTRY	008	12/20/01	12/20/01	12/20/06	EF
EPIP-3-4	EMERGENCY TERMINATION AND RECOVERY	008	03/12/01	03/12/01	03/12/06	EF
EPIP-3-7	SECURITY DURING EMERGENCIES	009	11/16/99	11/16/99	11/16/04	EF
EPIP-4-1	PUBLIC INFORMATION RESPONSE TO AN UNUSUAL EVENT	006	02/13/98	02/13/98	02/13/03	EF
EPIP-4-3	ACCIDENTAL ACTIVATION OF GINNA EMERGENCY NOTIFICATION SYSTEM SIRENS	009	03/01/02	03/01/02	03/01/07	EF
EPIP-4-6	JOINT EMERGENCY NEWS CENTER ACTIVATION	009	08/31/01	08/31/01	08/31/06	EF
EPIP-4-7	PUBLIC INFORMATION ORGANIZATION STAFFING	019	03/01/02	03/01/02	03/01/07	EF
EPIP-5-1	OFFSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	024	04/24/02	04/24/02	04/24/07	EF
EPIP-5-2	ONSITE EMERGENCY RESPONSE FACILITIES AND EQUIPMENT PERIODIC INVENTORY CHECKS AND TESTS	027	04/24/02	04/24/02	04/24/07	EF
EPIP-5-5	CONDUCT OF DRILLS AND EXERCISES	013	08/31/01	08/31/01	08/31/06	EF

PARAMETERS: DOC TYPES - PREPIP STATUS: EF 5 YEARS ONLY:

PROCEDURE NUMBER	PROCEDURE TITLE	REV	EFFECT DATE	LAST REVIEW	NEXT REVIEW	ST
EPIP-5-6	ANNUAL REVIEW OF NUCLEAR EMERGENCY RESPONSE PLAN (NERP)	004	05/28/99	05/28/99	05/28/04	EF
EPIP-5-7	EMERGENCY ORGANIZATION	035	04/24/02	04/24/02	04/24/07	EF
EPIP-5-9	TESTING THE OFF HOURS CALL-IN PROCEDURE AND QUARTERLY TELEPHONE NUMBER CHECK	006	05/28/99	05/28/99	05/28/04	EF
EPIP-5-10	EMERGENCY RESPONSE DATA SYSTEM (ERDS)	006	03/28/02	03/28/02	03/28/07	EF
NERP	GINNA STATION NUCLEAR EMERGENCY RESPONSE PLAN	020	03/21/01	03/21/01	12/09/04	EF

TOTAL FOR PREPIP 52

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 1-0 REV. NO. 28

GINNA STATION EVENT EVALUATION AND CLASSIFICATION

TECHNICAL REVIEW

RESPONSIBLE MANAGER

05/15/02

EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY:

THIS PROCEDURE CONTAINS 41 PAGES

EPIP 1-0

GINNA STATION EVENT EVALUATION AND CLASSIFICATION

1.0 **PURPOSE:**

1.1 The purpose of this procedure is to provide guidance to personnel in evaluating situations which may require activation of the Nuclear Emergency Response lan and direct them to appropriate implementing procedures. Prompt recognition and classification is necessary to ensure the timely activation of support functions and notification of offsite organizations.

2.0 **RESPONSIBILITY:**

2.1 The Shift Supervisor/Emergency Coordinator (SS/EC) is responsible for initiating this procedure.

2.2 Once the EOF assumes command and control of the emergency, the EOF/Recovery Manager becomes responsible for continuing this procedure.

3.0 **REFERENCES:**

3.1 Developmental References

3.1.1 10CFR50 Appendix E

3.1.2 NUREG-0654

3.1.3 NUREG-0696

3.1.4 Nuclear Emergency Response Plan.

3.1.5 NUMARC Methodology for Development of Emergency Action Levels (NESP-007).

| 3.1.6 R.E. Ginna EAL Technical Basis Revision 28

3.2 Implementing References

3.2.1 ER-SC.4, Earthquake Emergency Plan.

3.2.2 TEG-2.0, Response Spectrum Calculation.

3.2.3 TEG-2.1, Safe Shutdown Earthquake (SSE) & Operating Basis Earthquake (OBE) Exceedence Determination.

4.0 **PRECAUTIONS:**

4.1 For emergency events involving the Emergency Operating Procedures, classification should only be made after the diagnostic steps of E-0 have been completed.

4.2 In the event that multiple "Initiating Conditions" are identified, the SS/EC shall review each condition and classify according to the highest Emergency Classification Level obtained.

4.3 During any event, the entire procedure should be reviewed for possible reclassification of the event.

4.4 See Definitions (Attachment 2) for terms used in this procedure.

4.5 Any time a current set of conditions is identified which requires an Emergency Classification, the event shall be classified and declared, even if the condition identified is quickly corrected.

4.5.1 Conditions which depend on delayed evaluation results, i.e., chemistry, RP analysis, etc., shall be classified and declared as soon as the results are known.

5.0 **PREREQUISITES:**

5.1 Entry to this procedure may be directed by various other plant procedures or at the discretion of the SS/EC.

6.0 **ACTIONS:**

6.1 In the event of an abnormal condition the Control Room Personnel will:

6.1.1 Perform the immediate responses defined in the appropriate plant procedures.

6.1.2 Identify the initiating conditions using either the guidelines of the EAL wallchart or Attachment 1 of this procedure.

6.1.3 Implement applicable Emergency Plan procedures based on Appendix guidelines.

6.1.3.1 EPIP 1-4, General Emergency

6.1.3.2 EPIP 1-3,Site Area Emergency

6.1.3.3 EPIP 1-2, Alert

6.1.3.4 EPIP 1-1, Unusual Event

6.2 Periodically re-evaluate the condition after initial classification of accident using the EAL wall chart or Attachment 1.

6.3 At the conclusion of the event, refer to EPIP 3-4, Emergency Termination and Recovery.

6.4 Any time previous initiating conditions are identified that would have warranted an Emergency Classification but they are no longer in effect at the time of identification, and do not require further evaluation or analysis, the event will be classified, but not declared.

6.4.1 Conditions which are corrected, but may require further safety evaluation or analysis, will be classified and declared.

6.4.2 The NRC will be notified any time an event is classified. This will be made by means of the NRC Emergency Notification System (ENS) phone using procedure O-9.3 "NRC Immediate Notification".

6.4.3 The Plant Manager and Corporate Nuclear Emergency Planner (or their alternates) shall also be informed of this notification as soon as possible for notifications to Wayne County, Monroe County and New York State. For these notifications, there is no 15 minute requirement.

7.0 **ATTACHMENTS**

1. Detailed Accident Classification
2. Definitions
3. Barrier loss/potential loss

EPIP 1-0
EMERGENCY ACTION LEVELS (EALS)

INDEX

NOTE: Changes to this attachment are required to be reflected on the EAL wall chart.

1.0 CRITICAL SAFETY FUNCTION STATUS TREES STATUS
1.1 Sub-criticality CSFST Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
1.1.3 RED path in F-0.1, SUB-CRITICALITY AND Actual or imminent entry into either: - RED path in F-0.2, CORE COOLING OR - RED path in F-0.3, HEAT SINK Mode Applicability - (1) Power Operations - (2) Startup - (3) Hot Shutdown	1.1.2 RED path in F-0.1, SUB-CRITICALITY Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown	1.1.1 Any failure of an automatic trip signal to reduce power range <5% AND Manual trip is successful. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown	

1.2 Core Cooling CSFST Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
1.2.2 RED path in F-0.2, CORE COOLING AND Functional restoration procedures not effective within 15 minutes. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	1.2.1 ORANGE or RED path in F-0.2, CORE COOLING Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby		

1.3 Heat Sink CSFST Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	1.3.1 RED path in F-0.3, HEAT SINK Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby		

1.4 Integrity CSFST Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		1.4.1 RED path on F-0.4, INTEGRITY Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	

1.5 Containment CSFST Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
1.5.1 RED path on F-0.5, CONTAINMENT resulting from loss of reactor coolant Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby			

2.0 REACTOR FUEL

2.1 Coolant Activity

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	2.1.3 Coolant sample activity >300 µCi/gm of I-131 equivalent AND Any of the following: - RED path on F-0.4, INTEGRITY - Primary system leakage >46 gpm - RCS subcooling <EOP figure MIN SUBCOOLING due to RCS leakage - Containment radiation monitor R-29/30 reading >10R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	2.1.2 Coolant sample activity >300 µCi/gm of I-131 equivalent. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	2.1.1 Coolant sample activity: >100% of 100/E-Bar µCi/gm total specific activity OR >1.0 µCi/gm I-131 equivalent and entry into conditions of Tech. Spec. section 3.4.16.b. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

2.2 Failed Fuel Detectors

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	2.2.3 Letdown line monitor R-9 >10R/hr AND any of the following: - RED path on F-0.4, INTEGRITY - Primary system leakage >46gpm - RCS subcooling <EOP figure MIN SUBCOOLING due to RCS leakage - Containment radiation monitor R-29/30 reading >10R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	2.2.2 Letdown line monitor R-9 >10R/hr. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	2.2.1 Letdown line monitor R-9 >2R/hr AND Tave >500°F Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown

2.3 Containment Radiation

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
2.3.3 Containment radiation monitor R-29/30 reading >1000R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	2.3.2 Containment radiation monitor R-29/30 reading >100R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	2.3.1 Containment radiation monitor R-29/30 reading >10R/hr due to RCS leakage. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	

2.4 Refueling Accidents or Other Radiation Monitors

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		2.4.2 Confirmed sustained alarm on any of the following radiation monitors resulting from an uncontrolled fuel handling process. - R-2 Containment Area Monitor - R-5 Spent Fuel Pit - R-12 Containment Noble Gas Mode Applicability: - All 2.4.3 Report of visual observation of irradiated fuel uncovered. Mode Applicability: - All	2.4.1 Spent fuel pool (reactor cavity during Refueling) water level cannot be restored and maintained above the spent fuel pool low water level alarm setpoint Mode Applicability: - All

3.0 REACTOR COOLANT SYSTEM

3.1 RCS Leakage

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	3.1.3 RVLIS cannot be maintained >77% with no RCPs running OR With the Reactor Vessel head removed, it is reported that water level in the Reactor Vessel is dropping in an uncontrolled manner and core uncovery is likely Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby - (5) Cold Shutdown - (6) Refueling	3.1.2 Primary system leakage >46gpm Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	3.1.1 Unidentified or pressure boundary leakage greater than 10gpm OR Identified leakage greater than 25gpm Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

3.2 Primary to Secondary Leakage

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	3.2.2 Unisolable release of secondary side to atmosphere with primary to secondary leakage >46 gpm. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby 3.2.3 Unisolable release of secondary side to atmosphere with primary to secondary leakage >0.1 gpm in the affected AND EITHER - Coolant activity >300 µCi/gm of I-131 equivalent OR - Letdown line monitor R-9 >10 R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	(See 3.1.2 above)	3.2.1 Unisolable release of secondary side to atmosphere with primary to secondary leakage greater than 0.1gpm in the affected S/G Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

3.3 RCS Subcooling

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		3.3.1 RCS subcooling <EOP figure MIN SUBCOOLING due to RCS leakage Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	

4.0 CONTAINMENT
4.1 Containment Integrity Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
4.1.4 Safety injection signal due to LOCA with less than minimum operable containment heat removal equipment of CNMT PRESS / RECIRC FANS OPER / SPRAY PUMPS REQ'D < 28 psig: 2 / N/A ≥28 psig: 2 / 1 < 2 / 2 AND one or more of the following fuel clad loss indicators: - Coolant activity >300 µCi/gm of I-131 equivalent - Containment radiation monitor (R-29/30) reading >100R/hr - Letdown monitor R-9 reading >10R/hr - RED path in F-0.2, CORE COOLING Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby (Continued on next page)	4.1.2 Rapid uncontrolled decrease in containment pressure following initial increase due to LOCA. OR Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby (Continued on next page)		4.1.1 Both doors open on containment airlock OR Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment OR CI or CVI valve(s) not closed when required which results in a radiological release pathway to the environment OR Rapid uncontrolled pressure decrease following initial increase due to steam line break. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

4.1 Containment Integrity Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
4.1.5 EITHER Rapid uncontrolled decrease in containment pressure following initial increase due to LOCA OR Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions AND one or more of the following fuel clad damage indicators: - ORANGE or RED path in F-0.2, CORE COOLING - RED path in F-0.3, HEAT SINK - Coolant activity >300μ Ci/gm of I-131 equivalent - Containment radiation monitor R-29/R-30 reading >100R/hr - Letdown line monitor R-9 reading >10R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby (Continued on next page)	4.1.3 EITHER: CI or CVI valve(s) not closed when required following confirmed LOCA OR Inability to isolate any primary system discharging outside containment AND Radiological release pathway to the environment exists as a result. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby		

4.1 Containment Integrity Status

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
4.1.6 EITHER CI or CVI valve(s) not closed when required following confirmed LOCA OR Inability to isolate any primary system discharging outside containment AND Radiological release pathway to environment exists as a result AND one or more of the following fuel clad damage indicators: - ORANGE or RED path in F-0.2, CORE COOLING - RED path in F-0.3, HEAT SINK - Coolant activity >300μ Ci/gm of I-131 equivalent - Containment radiation monitor reading >100R/hr - Letdown monitor R-9 reading >10R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby			

4.2 Steam Generator Tube Rupture with Secondary Release

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
4.2.2 Unisolable secondary side line break with S/G tube rupture as identified in E-3 "Steam Generator Tube Rupture". AND one or more of the following fuel clad damage indicators: - ORANGE or RED path in F-0.2, CORE COOLING - RED path in F-0.3, HEAT SINK - Coolant activity >300 µCi/gm of I-131 equivalent - Containment radiation monitor R-29/30 reading >100R/hr - Letdown monitor R-9 reading >10R/hr Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	4.2.1 Unisolable secondary side line break with S/G tube rupture as identified in E-3 "Steam Generator Tube Rupture" Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby		

4.3 Combustible Gas Concentrations

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
4.3.1 ≥4% hydrogen concentration in containment Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby			

5.0 RADIOACTIVITY RELEASE/ AREA RADIATION

5.1 Effluent Monitors

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
5.1.4 A valid reading on one or more of the following monitors for >15 minutes - R12A7 6.00E+1 µCi/cc - R14A7 5.33E0 µCi/cc - R15A9 1.15E+2 µCi/cc - R31/32 reading with the following condition: 1 ARV 1.90E+2 mR/hr 1 Safety 9.51E+1 mR/hr 2 Safeties 4.76E+1 mR/hr 3 Safeties 3.17E+1 mR/hr 4 Safeties 2.38E+1 mR/hr unless dose assessment can confirm releases at the site boundary are below the following within the 15 minute limit - 1000 mR TEDE - 5000 mR CDE thyroid - 1000 mR/hr external exposure rate - 5000 mR/hr thyroid exposure for 1 hour of inhalation Mode Applicability: - All	5.1.3 A valid reading on one or more of the following monitors for >15 minutes - R12A7 6.00E+0 µCi/cc - R14A7 5.33E-1 µCi/cc - R15A9 1.15E+1 µCi/cc - R31/32 reading with the following condition: 1 A RV 1.90E+1 mR/hr 1 Safety 9.51E0 mR/hr 2 Safeties 4.76E0 mR/hr 3 Safeties 3.17E0 mR/hr 4 Safeties 2.38E0 mR/hr unless dose assessment can confirm releases at the site bou ndary are below the following within the 15 minute limit - 100 mR TEDE - 500 mR CDE thyroid - 100 mR/hr external exposure rate - 500 mR/hr thyroid exposure rate for 1 hour of inhalation Mode Applicability: - All	5.1.2 A valid reading on one or more of the following monitors for >15 minutes - R12A7 6.00E-1 µCi/cc - R14A7 5.33E-2 µCi/cc - R15A7 1.15E+0 µCi/cc - R18 Offscale High with no isolation - R20A Offscale High - R20B Offscale High - R21 Offscale High with no isolation - R22 Offscale High with no isolation - R31/32 reading with the following condition: 1 ARV 1.90E0 mR/hr 1 Safety 9.51E-1 mR/hr 2 Safeties 4.76E-1 mR/hr 3 Safeties 3.17E-1 mR/hr 4 Safeties 2.38E-1 mR/hr unless dose assessment can confirm releases at the site boundary are below - 10 mR TEDE or - 10 mR/hr external exposure rate within the 15 minute limit Mode Applicability: - All	5.1.1 A valid reading on one or more of the following monitors for >60 minutes unless sample analysis can confirm release rates are less than two times release rate limits within the 60 minute time limit. - R11 1.72E5 cpm during containment purge - R12 7.80E6 cpm during containment purge - R13 2.20E4 cpm - R14 6.40E5 cpm - R15 2.94E5 cpm - R18 3.60E5 cpm with no isolation - R20A 4.08E4 cpm - R20B 5.20E3 cpm - R21 5.00E4 cpm with no isolation - R22 9.20E4 cpm with no isolation - R31/32 reading 0.2 mR/hr with 1 ARV or 1 Safety open. Mode Applicability: - All

5.2 Dose Projections/ Environmental Measurements/Release Rates

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
5.2.5 Dose projections or field surveys resulting from actual or imminent release which indicate doses/dose rates in excess of 1000mR/hr external exposure rate at the Site Boundary or beyond OR Dose projections or field surveys resulting from actual or imminent release which indicate ≥5000mR/hr thyroid exposure dose rate at the Site Boundary or beyond OR Dose projections or field surveys resulting from actual or imminent release which indicate ≥1000mR TEDE dose at the Site Boundary or beyond OR Dose projections or field surveys indicate ≥5000mR CDE thyroid dose at the Site Boundary or beyond. Mode Applicability: - All	5.2.4 Dose projections or field surveys resulting from actual or imminent release which indicate dose rates in excess of 100mR/hr external exposure rate at the Site Boundary or beyond OR Dose projections or field surveys resulting from actual or imminent release which indicate ≥500mR/hr thyroid exposure dose rate at the Site Boundary or beyond OR Dose projections or field surveys resulting from actual or imminent release which indicate ≥100mR TEDE dose at the Site Boundary or beyond OR Dose projections or field surveys resulting from actual or imminent release which indicate ≥500mR CDE thyroid dose at the Site Boundary or beyond. Mode Applicability: - All	5.2.2 Confirmed sample analysis for gaseous or liquid release rates in excess of two hundred times release rate limits for >15 min Mode Applicability: - All 5.2.3 Dose projections or field surveys resulting from actual or imminent release which indicate ≥10mR/hr external exposure rate at the Site Boundary or beyond OR Dose projections or field surveys resulting from actual or imminent release which indicate ≥10mR TEDE dose the Site Boundary or beyond Mode Applicability: - All	5.2.1 Confirmed sample analysis for gaseous or liquid release rates in excess of two times release rate limits for >60 min Mode Applicability: - All

5.3 Area Radiation Levels

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		5.3.2 Sustained area radiation levels > 15 mR/hr in either Control Room OR Central Alarm Station and Secondary Alarm Station Mode Applicability: - All 5.3.3 Sustained abnormal area radiation levels > 8 R/hr within any of the following areas: - Containment - Auxiliary Building - Turbine Building - Emergency Diesel Bldg. - Screen house - Standby Auxiliary Feedwater Building AND Access is required to establish or maintain Cold Shutdown Mode Applicability: - All	5.3.1 Any sustained direct area radiation monitor readings > 100 times alarm or off-scale high resulting from an uncontrolled process. Mode Applicability: - All

6.1 Loss of AC Power Sources

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
6.1.5 Loss of all safeguards bus AC power AND EITHER: power restoration to any safeguards train is not likely in 4 hours OR Actual or imminent entry into ORANGE or RED path on F-0.2, CORE COOLING Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	6.1.4 Loss of both trains of AC busses for greater than 15 minutes Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	6.1.2 Loss of both trains of AC busses for greater than 15 minutes Mode Applicability: - (5) Cold Shutdown - (6) Refueling - (D) Defueled 6.1.3 Available safeguards train AC power reduced to only one of the following sources for >15 minutes. - EDG 1A (14/18) - EDG 1B (16/17) - Station Auxiliary Transformer 12A - Station Auxiliary Transformer 12B Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	6.1.1 Loss of ability to supply power to the safeguard trains from offsite circuits 751 and 767 for greater than 15 minutes Mode Applicability: - All

6.2 Loss of DC Power Sources

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	6.2.2 <108vdc bus voltage indications on 125vdc batteries 1A AND 1B for >15 minutes. Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby		6.2.1 <108vdc bus voltage indications on 125vdc batteries 1A AND 1B for >15 minutes. Mode Applicability: - (5) Cold Shutdown - (6) Refueling

7.0 EQUIPMENT FAILURES

7.1 Technical Specification Requirements

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
			7.1.1 Plant is not brought to the required operating mode within Technical Specifications LCO Required Action Completion Time Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

7.2 Safety Failures or Control Room Evacuation

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	7.2.5 Entry into AP-CR.1 "Control Room Inaccessability" AND Control of core cooling cannot be established per AP-CR.1 "Control Room Inaccessibility" within 20 minutes Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby - (5) Cold Shutdown - (6) Refueling	7.2.2 Turbine failure generated missiles results in any visible structural damage to plant vital equipment. Mode Applicability - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby 7.2.3 Entry into AP-CR.1 "Control Room Inaccessability" Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby - (5) Cold Shutdown - (6) Refueling 7.2.4 Reactor coolant temperature cannot be maintained <200°F Mode Applicability: - (5) Cold Shutdown - (6) Refueling	7.2.1 Report of main turbine failure resulting in casing penetration or damage to turbine seals or generator seals Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

7.3 Loss of Indications/Communication Capability

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
	7.3.4 Loss of annunciators or indications on any of the following Control Room Panels - A - AA - B - C - D - E - F - G AND Complete loss of ability to monitor any critical safety function status AND A plant transient in progress Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	7.3.3 Unplanned loss of annunciators or indications on any of the following Control Room Panels for greater than 15 minutes - A - AA - B - C - D - E - F - G AND increased surveillance is required for safe plant operation AND EITHER - A plant transient in progress OR - PPCS is unavailable Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	7.3.1 Unplanned loss of annunciators or indications on any of the following Control Room Panels for greater than 15 minutes - A - AA - B - C - D - E - F - G AND increased surveillance is required for safe plant operation Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby 7.3.2 Loss of all communications capability affecting the ability to either: - perform routine operations OR - Notify offsite agencies or personnel Mode Applicability: - All

8.0 HAZARDS

8.1 Security Threats

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
8.1.4 Security event which results in: - Loss of plant control from the control room OR - Loss of remote shutdown capability Mode Applicability: - All	8.1.3 Intrusion into plant security vital area by an adversary OR Any security event which represents actual or likely failures of plant systems needed to protect the public Mode Applicability: - All	8.1.2 Intrusion into plant Protected Area by an adversary OR Any security event which represents an actual or substantial degradation of the level of safety of the plant. Mode Applicability: - All	8.1.1 Bomb device or other indication of attempted sabotage discovered within plant Protected Area OR Notification of any credible site specific security threat by the Security Shift Supervisor or outside agency (NRC, military or law enforcement Mode Applicability: - All

8.2 Fire or Explosion

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		8.2.2 Fire or explosion in any of the following plant areas which results in <u>EITHER</u> visible damage to plant equipment or structures needed for safe shutdown <u>OR</u> Loss of a safety system - Intermediate Building - TSC - Service Building - Contaminated Storage Building - Control Building - Containment Building - Auxiliary Building - Turbine Building - Emergency Diesel Building - Standby Auxiliary Feedwater Building - Screen House <u>Mode Applicability:</u> - All	8.2.1 Confirmed fire in any of the following plant areas not extinguished within 15 minutes of control room notification - Intermediate Building - TSC - Service Building - Contaminated Storage Building - Control Building - Containment Building - Auxiliary Building - Turbine Building - Emergency Diesel Building - Standby Auxiliary Feedwater Building - Screen House <u>Mode Applicability:</u> - All

8.3 Man-Made Events

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		8.3.4 Vehicle crash or projectile impact which precludes personnel access to or damages equipment in the following plant vital areas - Control Building - Containment Building - Auxiliary Building - Intermediate Building - Emergency Diesel Building - Standby Auxiliary Feedwater Building - Screen House Mode Applicability: - All 8.3.5 Report or detection of toxic or flammable gases within the following plant areas, in concentrations that will be life threatening to plant personnel or precludes access to equipment needed for safe plant operations - Control Building - Containment Building - Auxiliary Building - Intermediate Building - Emergency Diesel Building - Standby Auxiliary Feedwater Building - Screen House Mode Applicability: - All	8.3.1 Vehicle crash into or projectile which impacts plant structures or systems within Protected Area Boundary Mode Applicability: - All 8.3.2 Report by plant personnel of an explosion within Protected Area Boundary resulting in visible damage to permanent structures or equipment Mode Applicability: - All 8.3.3 Report or detection of toxic or flammable gases that could enter or have entered within the Protected Area Boundary in amounts that could affect the health of plant personnel or safe plant operation OR Report by local, county or state officials for potential evacuation of site personnel based on offsite event Mode Applicability: - All

8.4 Natural Events

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		8.4.4 Earthquake felt in plant by any plant operations personnel AND Confirmation of earthquake of an intensity greater than 0.08g per ER-SC.4 "Earthquake Emergency Plan" Mode Applicability: - All 8.4.5 Sustained winds >75mph OR Tornado strikes one of the following plant vital areas - Control Building - Containment Building - Auxiliary Building - Intermediate Building - Emergency Diesel Building - Standby Auxiliary Feedwater Building - Screen House Mode Applicability: - All (Continued on next page)	8.4.1 Earthquake felt in plant by any plant operations personnel AND Confirmation of earthquake of an intensity greater than 0.01g per ER-SC.4 "Earthquake Emergency Plan" Mode Applicability: - All 8.4.2 Report by plant personnel of tornado striking within plant Protected Area Boundary Mode Applicability: - All (Continued on next page)

8.4 Natural Events

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
		8.4.6 Any natural event which results in a report of visible structural damage or assessment by control room personnel of actual damage to equipment needed for safe plant operation in any of the following plant areas: - Control Building - Containment Building - Auxiliary Building - Intermediate Building - Emergency Diesel Building - Standby Auxiliary Feedwater Building -Screen House Mode Applicability: - All 8.4.7 Flood water accumulating on screen house operating floor OR Lake level >253 ft OR Screen House Suction Bay water level ≤ 16 feet or ≤14.5 feet by manual level measurement Mode Applicability: - All	8.4.3 Deer Creek flooding over entrance road bridge handrail OR Lake level >252 ft OR Screen House Suction Bay water level <19 feet or ≤ 17.5 feet by manual level measurement Mode Applicability: - All

9.0 OTHER

GENERAL EMERGENCY PROCEED TO EPIP 1-4	SITE AREA EMERGENCY PROCEED TO EPIP 1-3	ALERT PROCEED TO EPIP 1-2	UNUSUAL EVENT PROCEED TO EPIP 1-1
9.1.7 In the opinion of the Shift Supervisor or Emergency Coordinator, events are in progress which indicate actual or imminent core damage and the potential for a large release of radioactive material in excess of EPA PAGs outside the site boundary Mode Applicability: - All 9.1.8 Any event, which in the opinion of the Shift Supervisor or Emergency Coordinator, that could or has led to a loss of any two fission product barriers and loss or potential loss of the third (Attachment 3) Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	9.1.5 In the opinion of the Shift Supervisor or Emergency Coordinator, events are in progress which indicate actual or likely failures of plant systems needed to protect the public. Any releases are not expected to result in exposures which exceed EPA PAGs Mode Applicability: - All 9.1.6 Any event, which in the opinion of the Shift Supervisor or Emergency Coordinator, that could or has led to either: - Loss or potential loss of both fuel clad and RCS barrier (Attachment 3) OR - Loss or potential loss of either fuel clad and RCS barrier in conjunction with a loss of containment (Attachment 3) Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	9.1.3 Any event, which in the opinion of the Shift Supervisor or Emergency Coordinator, that could cause or has caused actual substantial degradation of the level of safety of the plant Mode Applicability: - All 9.1.4 Any event, which in the opinion of the Shift Supervisor or Emergency Coordinator, that could lead or has led to a loss or potential loss of either fuel clad or RCS barrier (Attachment 3) Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby	9.1.1 Any event, which in the opinion of the Shift Supervisor or Emergency Coordinator, that could lead to or has led to a potential degradation of the level of safety of the plant Mode Applicability: - All 9.1.2 Any event, which in the opinion of the Shift Supervisor or Emergency Coordinator, that could lead to or has led to a potential loss of containment (Attachment 3) Mode Applicability: - (1) Power Operations - (2) Startup - (3) Hot Shutdown - (4) Hot Standby

ATTACHMENT 2

DEFINITIONS

Actuate	-	To put into operation; to move into action; commonly used to refer to automated, multi-faceted operations. "Actuate ECCS".
Adversary	-	As applied to security EALs, an individual whose intent is to commit sabotage, disrupt station operations or otherwise commit a crime on station property.
Adverse Meteorology	-	Low wind speed and low dispersion of effluents.
Alert	-	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.
Available	-	The state or condition of being ready and able to be used (placed into operation) to accomplish the stated (or implied) action or function. As applied to a system, this requires the operability of necessary support systems (electrical power supplies, cooling water, lubrication, etc).
Can/Cannot be determined	-	The current value or status of an identified parameter relative to that specified can/cannot be ascertained using all available indications (direct and indirect, singly or in combination).
Can/Cannot be maintained above/below	-	The value of the identified parameter(s) is/is not able to be kept above/below specified limits. This determination includes making an evaluation that considers both current and future system performance in relation to the current value or trend of the parameter(s). Neither implies that the parameter must actually exceed the limit before the action is taken nor that the action must be taken before the limit is reached.
Can/Cannot be restored above/below	-	The value of the identified parameter(s) is/is not able to be returned to above/below specified limits after having passed those limits. This determination includes making an evaluation that considers both current and future systems performances in relation to the current value and trend of the parameter(s). Does not imply any specific time interval but does not permit prolonged operation beyond a limit without taking the specified action. As applied to loss of electrical power sources (ex.:power cannot be restored to any vital bus in $\leq$4 hrs) the specified power source cannot be returned to service within the specified time. This determination includes making an evaluation that considers both current and future restoration capabilities. Implies that the declaration should be made as soon as the determination is made that the power source cannot be restored within the specified time.
Classified	-	Identify an EAL that corresponds to plant conditions

Close	- To position a valve or damper so as to prevent flow of the process fluid. - To make an electrical connection to supply power
Confirm/Confirmation	- To validate, through visual observation or physical inspection, that an assumed condition is as expected or required, without taking action to alter the "as found" configuration.
Control	- Take action, as necessary, to maintain the value of a specified parameter within applicable limits; to fix or adjust the time, amount, or rate of; to regulate or restrict.
Core Failure	- Fission product release to containment atmosphere that results in a reading of > 1000 REM/HR on containment area monitor R-2, R-29 or R-30.
Declared	- Use of the New York State Radiological Emergency Data Form in procedure EPIP 1-5 to notify offsite agencies of a classified event.
Decrease	- To become progressively less in size, amount, number, or intensity.
Discharge	- Removal of a fluid/gas from a volume or system.
ECCS	- High and low pressure safety injection - Accumulators
Enter	- To go into.
Establish	- To perform action necessary to meet a stated condition. "Establish communication with the Control Room."
Evacuate	- To remove the contents of; to remove personnel from an area.
Exceeds	- To go beyond a stated or implied limit, measure, or degree.
Exist	- To have being with respect to understood limitations or conditions.
Facility	- The Protected Area of the plant. The area within the security fence
Failed Fuel	- An increase in primary coolant activity reflected by an unexplained increase on failed fuel monitor (R-9) which exceeds its high alarm setpoint. If R-9 reading unavailable or unreliable, the failed fuel condition would be verified by a primary sample analysis.
Failure	- A state of inability to perform a normal function.
Fire	- The observance of flames or if any doubt exists due to excessive smoke, inaccessible location, a fire should be assumed to be present.
General Emergency	- Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

Hazards	-	Aircraft crash, explosion, missiles, toxic gas, flammable gas, or turbine blade failures.
If	-	Logic term which indicates that taking the action prescribed is contingent upon the current existence of the stated condition(s). If the identified conditions do not exist, the prescribed action is not to be taken and execution of operator actions must proceed promptly in accordance with subsequent instructions.
Increase	-	To become progressively greater in size, amount, number or intensity.
Indicate	-	To point out or point to; to display the value of a process variable; to be a sign or symbol.
Initiate	-	The act of placing equipment or a system into service, either manually or automatically. Activation of a function or protective feature (i.e. initiate a manual trip).
Injection	-	The act of forcing a fluid into a volume or vessel.
Inoperable	-	Not able to perform it's intended function.
Intrusion	-	The act of entering without authorization.
LOCA	-	Entry into E-1.
Loss	-	Failure of operability or lack of access to.
Loss of all Meteorological Indications	-	Total loss of wind speed, wind direction and temperature from the primary weather tower onsite and of wind direction and wind speed from the back up weather tower located at Station 13A (accessible using EPIP 2-2), and all off-site sources available to the on-shift RP Tech.
Loss of Secondary Coolant	-	Entry into E-1.
Maintain	-	Take action, as necessary, to keep the value of the specified parameter within the applicable limits.
Monitor	-	Observe and evaluate at a frequency sufficient to remain apprised of the value, trend, and rate of change of the specified parameter.
Notify	-	To give notice of or report the occurrence of; to make known to; to inform specified personnel; to advise; to communicate; to contact; to relay.
OBE	-	Operating Basis Earthquake. An earthquake having 0.08g peak ground acceleration.

Open	-	To position a valve or damper so as to allow flow of the process fluid. To break an electrical connection which removes a power supply from - an electrical device. To make available for entry or passage by turning back, removing, or - clearing away.
Operable	-	Able to perform it's intended function.
Perform	-	To carry out an action; to accomplish; to affect; to reach an objective.
Periodically	-	As plant conditions change.
Plant Building	-	Turbine Building, Serv. Building, Containment, Aux. Building, Standby Aux. Feed Building or the Screen House, Contaminated Storage Building or Upper Radwaste Storage Building.
Primary System	-	The pipes, valves, and other equipment which connect directly to the reactor vessel or reactor coolant system such that a reduction in reactor coolant system pressure will effect a decrease in the steam or water pressure being discharged through an unisolated break in the system.
Radiation Monitor	-	Any permanent or temporary area or process monitor.
Remove	-	To change the location or position of.
Report	-	To describe as being in a specific state.
Require	-	To demand as necessary or essential.
Restore	-	Take the appropriate action required to return the value of an identified parameter to within applicable limits.
Rise	-	Describes an increase in a parameter as the result of an operator or automatic system.
Safe Shutdown Equipment	-	Minimum equipment required by Appendix "R" procedures.
Sample	-	To perform an analysis on a specified media to determine its properties.
SGTR	-	Entry into E-3.
Shutdown	-	To perform operations necessary to cause equipment to cease or suspend operation; to stop. "Shutdown unnecessary equipment."
Site Area Emergency	-	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels except near the site boundary.

Sustained	-	Prolonged. Not intermittent or of transitory nature.
Sustained Winds	-	The five minuted average based on a PPCS reading from the 150 foot or 250 foot Met Tower wind speed indicator.
SSE	-	Safe Shutdown Earthquake. An earthquake having 0.2g peak ground acceleration.
TEDE	-	Total Effective Dose Equivalent.
Thyroid Dose	-	Thyroid dose is assumed to be the same as Committed Dose Equivalent (CDE).
Trip	-	To de-energize a pump or fan motor; to position a breaker so as to interrupt or prevent the flow of current in the associated circuit; to manually activate a semi-automatic feature. - To take action to cause shutdown of the reactor by opening the reactor trip breaker.
Total Loss of All Feedwater	-	Total loss of Condensate, Mainfeed, all Auxiliary Feedwater and Standby Auxiliary Feedwater.
Uncontrolled	-	An evolution lacking control but is not the result of operator action.
Unexplained	-	A condition where parameters/condition exist that are not normal for current plant status and are not a result of operator action.
Unmonitored Release	-	A release of radioactive material to the environment which does not pass through an area or process monitor.
Unplanned	-	Not as an expected result of deliberate action.
Until	-	Indicates that the associated prescribed action is to proceed only so long as the identified condition does not exist.
Unusual Event	-	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
Valid	-	Supported or corroborated on a sound basis.
Vent	-	To open an effluent (exhaust) flowpath from an enclosed volume; to reduce pressure in an enclosed volume.
Verify	-	To confirm a condition and take action to establish that condition if required. "Verify reactor trip, verify SI pumps running."
Vital Areas	-	Areas of the plant containing equipment or machinery that could affect the safe operation or shutdown of the plant.
Whole Body Dose	-	Whole body dose is assumed to be the same as Total Effective Dose Equivalent (TEDE).

Attachment 3
BARRIER LOSS/POTENTIAL LOSS
Fuel Cladding

Potential Loss	Loss
ORANGE path in F-0.2, CORE COOLING	RED path in F-0.2, CORE COOLING
RED path in F-0.3, HEAT SINK	Coolant activity > 300 µCi/cc of I-131
Core Exit Thermocouple Readings > 700 °F	Core Exit Thermocouple Readings > 1200 °F
RVLIS <77% w/ no RCPs running	Containment rad monitor reading >100 R/hr
Emergency Coordinator Judgment	Letdown Monitor (R-9) reading > 10 R/hr
	Emergency Coordinator Judgment

RCS

Potential Loss	Loss
RED path on F-0.4, INTEGRITY	RCS subcooling < EOP Fig. MIN SUBCOOLING due to RCS leakage
RED path on F-0.3, HEAT SINK	Unisolable secondary side line break with SG tube rupture as identified in E-3 "Steam Generator Tube Rupture"
Primary system leakage > 46 gpm	Containment radiation monitor reading > 10 R/hr
Emergency Coordinator Judgment	Emergency Coordinator Judgment

Attachment 3
BARRIER LOSS/POTENTAIL LOSS
Containment

Potential Loss	Loss
RED path F-0.5, CONTAINMENT Either: Core exit thermocouples >1200 °F OR Core exit thermocouples >700 °F with RVLIS <77% (no RCPs) AND Restoration procedures not effective within 15 minutes	Rapid uncontrolled decrease in Containment Pressure following initial increase Loss of primary coolant inside containment with containment pressure or sump level response not consistent with LOCA conditions, i.e. unexpected changes occur in these parameters that are not explainable due to operator actions or automatic system actions.
Safety injection signal due to LOCA with < the minimum containment cooling safeguards equipment operating: CNMT pressure <28 psig: 2 CNMT Recirc Fans CNMT pressure ≥28 psig: 2 CNMT Spray Pumps OR 2 CNMT Recirc Fans and 1 CNMT Spray Pump	Either: CI or CVI isolation required and CI or CVI valve(s) not closed when required OR Inability to isolate any primary system discharging outside containment AND Radiological release pathway to the environment exists
Containment pressure 60 psig and increasing	Release of secondary side to atmosphere with primary to secondary leakage greater than tech spec allowable of 0.1 GPM per steam generator
≥4 % hydrogen concentration in containment	Both doors open on containment airlock OR Inability to close containment pressure relief or purge valves which results in a radiological release pathway to the environment OR CI or CVI valve(s) not closed when required which results in a radiological release pathway to the environment
Containment radiation monitor reading >1000 R/hr Emergency Coordinator Judgment	Emergency Coordinator Judgment

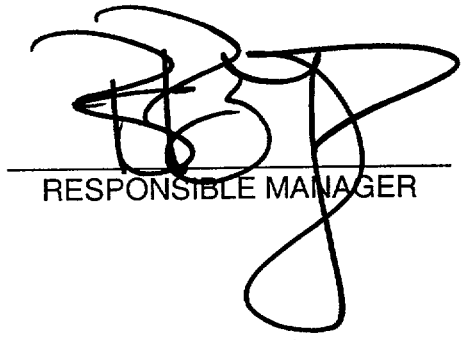
ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE No. EPIP 1-11 REV NO. 26

SURVEY CENTER ACTIVATION



RESPONSIBLE MANAGER

05/15/02

EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 10 PAGES

EPIP 1-11

SURVEY CENTER ACTIVATION

1.0 PURPOSE:

The purpose of this procedure is to designate duties for individuals who report to the Survey Center.

2.0 RESPONSIBILITY:

2.1 The first person to arrive is responsible for implementing this procedure.

2.2 The Survey Center Manager or the Assistant Survey Center Manager is responsible for activation of the Survey Center upon arrival.

3.0 REFERENCES:

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.2 Implementing References

3.2.1 EPIP 2-11, Onsite Surveys

3.2.2 EPIP 2-12, Offsite Surveys

3.2.3 EPIP 2-13, Iodine and Particulate Activity Determination from Air Samples

3.2.4 EPIP 3-3, Immediate Entry

3.2.5 EPIP 5-7, Emergency Organization

3.2.6 EPIP 1-18, Discretionary Actions for Emergency Conditions

3.2.7 RP-SUR-PER-DECON, Personnel, Decontamination

3.2.8 RP-JC-AMS-4, Routine Operation of the Eberline AMS-4 Air Monitor System

3.2.9 RPA-RW-SHIP-MTL, Shipment of Radioactive Material-General Guidance

4.0 PRECAUTIONS:

NONE

5.0 PREREQUISITES:

5.1 An Alert, Site Area Emergency or General Emergency has been declared in accordance with EPIP 1-0.

5.2 The Emergency Coordinator has requested that the Survey Center be activated.

6.0 **ACTIONS:**

NOTE: SELECTED PROCEDURES ARE LOCATED IN A BINDER INSIDE THE SURVEY CENTER. ADDITIONAL PROCEDURES THAT MAY BE NEEDED CAN BE OBTAINED FROM THE NUCLEAR TRAINING RESOURCE CENTER.

6.1 **ARRIVING PERSONNEL**

NOTE: DEPENDING ON THE NUMBER OF ARRIVING PERSONNEL, STEPS MAY BE PERFORMED CONCURRENTLY TO MINIMIZE ACTIVATION TIME.

6.1.1 Sign in under appropriate position on the Survey Center sign in board and obtain position I.D. badge if applicable. Refer to instructions on tag board or procedure EPIP 5-7.

6.1.1.1 Survey Team instructions are located in EPIP 2-11 and EPIP 2-12.

6.1.2 During normal working hours, bring your assigned TLD with you to the Survey Center. During off hours, obtain an emergency TLD from the Survey Center Manager if your normal TLD is not available.

6.1.3 Log in on Dosimetry Log (Attachment 2) and obtain Dosimetry. Refer to EPIP 2-11 and EPIP 2-12 for dosimeter ranges for Survey Team members. Survey Center personnel obtain 0-1500 mr dosimeters.

6.2 **SURVEY CENTER MANAGER OR ASSISTANT:**

6.2.1 Notify Emergency Coordinator (Ext. 3503) of your arrival.

6.2.2 Obtain Survey Center Keys and unlock equipment storage area door.

6.2.3 Ensure area monitor is operating and note reading. A reading of 1mR/hr or greater should be brought to the attention of the TSC Dose Assessment Manager so that a relocation plan can be formulated.

6.2.3.1 If radiation levels exceed 1 mR/hr, an audible and visual alarm is activated. Silence the audible alarm. The visual alarm stays lit uintil the alarm condition clears.

6.2.3.2 If radiation level exceeds 50 mR/hr., an audible and visual alarm is activated. Silence the audible alarm. The visual alarm stays lit until the alarm condition clears.

6.2.4 Ensure both Deskron II radios are ON and the volume is turned UP in the Survey Center.

CAUTION

IF DOSE RATES EXCEED 50 MREM/HR, ADVISE EMERGENCY COORDINATOR AND PREPARE FOR RELOCATION AFTER DISPATCH OF SURVEY TEAMS.

6.2.6 Conduct radiation survey of survey center and reception areas of both training buildings and the simulator and exterior building areas. Periodically, conduct contamination and radiation surveys of all training areas.

6.2.7 Place AMS-4 Air Monitor in operation, per RP-JC-AMS-4.

CAUTION

IF AIRBORNE IODINE ACTIVITY IS GREATER THAN 1E-8 μCi/cc, INFORM THE EMERGENCY COORDINATOR.

6.2.8 Take an air sample and analyze in accordance with EPIP 2-13.

6.2.9 If the Survey Center is not deemed habitable, the Survey Center Manager should inform the Dose Assessment Manager, and suggest relocation to an alternate survey team staging area such as: Warehouse west end of parking lot; Station 13A; Station 204 on Route 104; White house by the entrance to the plant access road; Manor House; RG&E Service Center on Plank Road just west of Route 250; Substation #230 - Atlantic Avenue, Walworth; and the Ontario Fire Department Exempt Hall on Route 104 between Route 350 and Knickerbocker Road.

6.2.10 If the Survey Center is to be relocated, contact the Maintenance Assessment Manager (at ext. 3628) to make arrangements to move the equipment to the alternate location. The equipment should include, but is not limited to:

- Radiological Survey Meters
- Air Samplers and filters
- TLD's
- Dosimeters
- Survey Maps
- Radios
- Cellular Phones
- Procedures
- Survey Team Boxes

6.2.11 Notify a Personnel Coordinator, from EPIP 5-7, that the Survey Center has been activated and to perform a personnel accountability as listed in Step 6.3.3.

6.2.12 Organize the Survey Teams:

a. To assist in briefing the Survey Teams obtain the most current copy of the NEW YORK STATE RADIOLOGICAL EMERGENCY DATA FORM (Part I) from the Survey Center fax machine (ext. 3612).

b. If the NEW YORK STATE RADIOLOGICAL EMERGENCY DATA FORM (Part I), is not available , contact the TSC and obtain the following information to assist in briefing the survey teams.

1. Wind speed and direction.
2. Release in progress or has occurred.
3. Event classification.
4. Plant conditions.

c. Post the event classification and weather data on the information board.

d. Maintain a log of all Survey Center activities.

e. Ensure arriving personnel sign in as Survey Team members, Communicator or Assistant Survey Center Managers.

f. Assist the Survey Teams to prepare for dispatch.

g. Ensure that the briefing covers the following items:

- Team identification
- Communications equipment and channel
- 3-way communications and use of phonetic alphabet
- Protective equipment (including use of KI)
- Authorized doses
- Survey instructions
- Survey equipment
- Type of date required
- Job safety including use of safety vests and yellow beacon (for offsite teams)

h. Collect Survey Team Equipment/Team Data forms (Attachment 3) from Survey Teams and insure data is transferred to the appropriate attachments located in EPIP procedures (e.g., Survey Center Dosimetry Log, EPIP 1-11, Attachment 2; EPIP Instrument Response Check, EPIP 2-11, Attachment 16 or EPIP 2-12, Attachment 21).

i. Notify the TSC Dose Assessment Manager when the Survey Teams are ready to be dispatched.

j. Fax a list of the members of each Survey Team and their cellular phone numbers to the TSC Dose Assessment Manager.

6.2.13 Confirm with TSC Dose Assessment Manager the need to frisk evacuees. If it decided to frisk evacuees, allow personnel who need to respond to the EOF or JENC to have front of the line privilege.

6.2.14 If arriving personnel are required to staff the TSC assist personnel requiring site access by referring to EPIP 3-3, Immediate Entry.

a. Notify Security at Secondary Alarm Station (Ext. 3267) of TSC members (by name) who will need access to the site.

b. Advise those going to the TSC of dose rates in the area.

c. Provide directions for site access route and safety precautions.

6.2.15 Ensure decontamination facilities are set up.

a. Switch the decontamination shower and deep sink drains from the sewer system to the holding tank by shutting and locking valve "S" and unlocking and opening valve "T" located to the right of the shower.

b. Set up receptacles, step-off pads and barriers to route traffic through the facility.

c. Operate the decontamination facility with RP section guidance in accordance with RP-SUR-PERS-DECON.

NOTE: PERIODICALLY, CHECK THE WATER LEVEL IN THE TANK BY LIFTING THE TANK COVER TO ENSURE THAT THE TANK IS NOT OVERFILLED WHILE IN USE.

d. When the holding tank high level alarm sounds (local alarm 1-1/2 feet from top of tank) notify the RP/Chemistry Manager or his designee.

CAUTION

ENSURE THAT THE DECONTAMINATION SHOWER AND DEEP SINK ARE NOT USED DURING SAMPLING AND /OR PUMPING. HANG "DO NOT USE" SIGNS ON SHOWER AND DEEP SINK.

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e. After a tank sample has been taken and analyzed, the RP/Chemistry Manager or his designee will determine if the tank will be pumped to the sewer system through a manhole located approximately 50 feet west of the holding tank or transferred to the Ginna radioactive waste system by tanker truck.

CAUTION

THE SURVEY CENTER MANAGER SHOULD NOTIFY THE SIMULATOR BUILDING OCCUPANTS IF OCCUPIED OR SEND SOMEONE TO THE SIMULATOR BUILDING DURING THE PUMPING OPERATION TO THE SEWER SYSTEM TO CHECK THE SUMP PUMPS ARE OPERATING PROPERLY TO HANDLE THE ADDITIONAL WATER BEING PUMPED FROM THE DECON SHOWER HOLDING TANK.

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f. After the holding tank has been pumped, restore decontamination operations.

g. After decontamination activities have been completed and the shower and deep sink have been smear-surveyed clean and released, restore the drain lineup to the sewer system. Shut and lock valve "T" and unlock and open valve "S".

h. Ensure all evolutions have been entered in the Survey Center Manager's log.

6.2.16 Notify TSC Administration/Communication Manager of accountability.

6.2.17 Inform the RP/Chemistry Manager (Ext. 3507) that the Environmental Laboratory should be set up to process samples collected by the survey teams. Have RP personnel set up lab using Attachment 1.

6.2.18 Segregation of samples

a. When survey teams return have them drop their samples off in the roped off area outside the Survey Center.

b. Insure all sample labels are filled out and legible.

c. Perform a survey of each sample returned. Place a label on the sample with the dose rate measured.

d. Segregate the samples into samples that read:

(a) greater than or equal to 200mR/hr
(b) less than 200mR/hr

NOTE: INITIAL SAMPLES THAT ARE COLLECTED THAT HAVE ACTIVITY SHOULD BE ANALYZED USING THE RP COUNT EQUIPMENT.

e. Notify the RP/Chemistry Manager that samples need to be counted or to make arrangements to ship them to a contact counting facility.

Place these samples in an area that will not contribute to the exposure of personnel in the Survey Center.

6.2.19 Conduct post-job brief when Survey Teams return to the Survey Center and document in the log.

6.2.20 Following termination of event, ensure the Dosimetry Log (Attachment 2) is forwarded to Dosimetry for entry into the RADOSE Dose Management System (RDMS).

6.3 PERSONNEL COORDINATOR:

6.3.1 Notify Survey Center Manager of your arrival.

6.3.2 Establish a means of constant communications with the Survey Center Manager.

6.3.3 Assure accountability of personnel outside the plant fence; but on company property, such as:

NOTE: **GROUNDS CREW CAN ASSIST IN NOTIFICATIONS OF PERSONNEL ON COMPANY PROPERTY OUTSIDE THE FENCE. CALL KEITH MERKEL (PAGER: 525-5772) OR NORM BURKETT (PAGER: 528-9513) FOR ASSISTANCE.**

a. Simulator Building (ext. 6668, 6646 or 6641)
b, Training Center (ext. 6600)
c. Grounds Crew (White House 315-524-5309)
d. Manor House (ext. 3744)
e. Offsite Warehouse (ext. 3292 or 3288)
f. Station 13A Area

6.3.4 Report completion of accountability to the Survey Center Manager.

6.3.5 Notify personnel outside the plant fence, but on company property to the emergency classification level, and direct them to standby for further instructions.

6.3.6 Direct evacuating personnel to appropriate assembly areas as required or as directed by Emergency Coordinator or Survey Center Manager.

6.3.7 Release evacuating personnel from assembly areas as required or as directed by Emergency Coordinator or Survey Center Manager.

6.3.8 Maintain control of evacuated personnel and additional personnel throughout the emergency.

7.0 **ATTACHMENTS:**

1. Environmental Laboratory Operations.
2. Survey Center Dosimetry Log.

ENVIRONMENTAL LABORATORY OPERATIONS

(To be performed by Radiation Protection Personnel)

Preparing the Environmental Laboratory to receive samples:

1. Samples will be transported from the Survey Center to the Environmental Laboratory. Place radioactive materials signs on the doors to the Environmental Laboratory and the count room. Rope off the west end of the Environmental Laboratory for sample storage. Remove any environmental samples stored in that area to prevent cross contamination.

2. Consult with the Survey Center Manager to determine the best route to transport the samples:

   a. If samples are transported inside thru the building, personnel may be exposed by the samples or contamination may be spread in the building. A route should be cleared prior to transport and surveyed for contamination afterwards.

   b. If samples are transported outside, there may be snow or rain to degrade the samples or there may be contamination deposited on the ground from a release. Place step-off pads down where personnel will re-enter the building. Perform surveys at that point to ensure that contamination has not been brought into the building.

Transport of the samples from the Survey Center to the Environmental Laboratory.

1. Ensure that the personnel transporting the samples are wearing dosimetry.

2. Place the samples to be transported into a clean plastic bag to prevent the spread of contamination.

3. Move the samples to the Environmental Laboratory.

4. Perform a survey of the route (smears or direct frisk) to ensure that contamination was not spread.

Analyzing samples in the Environmental Laboratory

1. Laboratory operations should be conducted using the appropriate Radiation Protection procedures for the Environmental Laboratory.

2. Inform the RP/Chemistry Manager when results are available from the Gamma Spectroscopy System. The TSC/EOF personnel can view the results from the facilities via modem.

3. If data needs to be faxed to the TSC/EOF use the fax machine in the Survey Center.

Moving the samples to an offsite laboratory.

1. Ensure that the samples are properly packaged, labeled and marked for activity in accordance with procedure RPA-RW-SHIP-MTL.

2. Laboratory operations at the offsite laboratory should be conducted using their procedures for analyzing samples.

SURVEY CENTER DOSIMETRY LOG

NAME	TLD NUMBER	DOSIMETER NUMBER	TIME		DOSIMETER READING		
			IN	OUT	IN	OUT	TOTAL

Forwarded to Dosimetry:_____

Date:_____

Dose Entered:_____

Date:_____

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-5 REV. NO. 14

EMERGENCY DOSE PROJECTIONS - PERSONAL COMPUTER METHOD

RESPONSIBLE MANAGER

05/15/02
EFFECTIVE DATE

Category 1.0

This procedure contains 10

EPIP 2-5

EMERGENCY DOSE PROJECTIONS - PERSONAL COMPUTER METHOD

1.0 PURPOSE

The purpose of this procedure is to provide a personal computer-based method for performing projections of downwind dose rates and doses. Such information is needed to decide upon protective actions to be recommended to limit the exposure of the general public and emergency workers.

2.0 RESPONSIBILITY

The TSC or EOF Dose Assessment Manager is responsible for implementing this procedure.

3.0 REFERENCES

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.1.2 EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (1991)

3.1.3 Ginna UFSAR, Chapter 15

3.1.4 Regulatory Guide 1.109

3.1.5 Vertechs Corporation, EOF8, Estimated Offsite Dose Assessment Program Documentation Binder

3.2 Implementing References

3.2.1 EPIP 2-1, Protective Action Recommendations

3.2.2 EPIP 2-2, Obtaining Meteorological Data and Forecasts and Their Use in Emergency Dose Assessment

3.2.3 EPIP 2-3, Emergency Release Rate Determination

3.2.4 EPIP 2-4, Emergency Dose Projections - Manual Method

3.2.5 EPIP 1-0, Ginna Station Event Evaluation and Classification

3.2.6 EPIP 2-17, Hypothetical (Pre-Release) Dose Estimates

4.0 PRECAUTIONS

None.

5.0 PREREQUISITES

5.1 The following equipment and data sources are available for use in performing computerized dose projections:

5.1.1 Plant Process Computer System (PPCS) - EVENT 2 Report.

5.1.2 Personal Computer in TSC and EOF (for obtaining 15-minute meteorological data averages from Ginna primary weather tower).

5.1.3 Back-up wind speed and direction indicators at Station 13A (accessible from TSC or EOF Personal Computer) and National Weather Service.

5.1.4 Field readings from survey teams, including gamma dose rate and air sample measurements taken in the release plume.

5.1.5 Personal Computer for performing dose projection routines detailed in this procedure.

DOSE ASSESSMENT USE OF GINNA COMPUTER DATA

NOTE: COMPARE ALL DOSE PROJECTIONS AGAINST EPIP 1-0, SECTION 5.2.

6.0 ACTIONS

6.1 Part "A" - Release Assessments

6.1.1 During a Ginna Refueling Outage, R12 could be an effluent monitor. Check with your technical support for this condition. If R12 is an effluent monitor and IS NOT on alarm or increasing, go to step 6.1.2. If R12 is an effluent monitor and IS on alarm or increasing, check:

EPIP 1-0 Section 5.1 and	Alarm	
R12A5 - SPING Containment Vent LOW Range Gas Monitor	□ Yes	□ No
R12A7 - SPING Containment Vent MID Range Gas Monitor	□ Yes	□ No
R12A9 - SPING Containment Vent HIGH Range Gas Monitor	□ Yes	□ No

Use the SPING sheet (Attachment 1) to determine which channel to use and enter the value in the DOWNCALC program (Go to step 6.1.2).

NOTE: R15 PROBLEMS USUALLY INDICATE THAT THERE IS A TUBE IN THE STEAM GENERATOR THAT IS LEAKING RADIOACTIVE REACTOR COOLANT SYSTEM WATER INTO THE NON-RADIOACTIVE STEAM PLANT WATER.

6.1.2 R15 - Condenser Air Ejector Monitor. If R15 IS NOT on alarm continue to Step 6.1.3. If R15 IS on alarm check:

	Alarm	
EPIP 1-0 Section 5.1 and		
R15A5 - SPING Condenser Air Ejector LOW Range Gas Monitor	□ Yes	□ No
R15A7 - SPING Condenser Air Ejector MID Range Gas Monitor	□ Yes	□ No
R15A9 - SPING Condenser Air Ejector HIGH Range Gas Monitor	□ Yes	□ No

Use the sping sheet (Attachment 1) to determine which channel to use and enter that value in the downcalc program. (Go to step 6.1.3).

NOTE: R14 PROBLEMS USUALLY INDICATE THAT THERE IS SOMETHING LEAKING IN THE AUXILIARY OR INTERMEDIATE BUILDINGS.

6.1.3 R14 - Plant Vent Gas Monitor. If R14 IS NOT on alarm go to step 6.1.4 If R14 IS on alarm check:

	Alarm	
EPIP 1-0 Section 5.1 and		
R14A5 - SPING Plant Vent LOW Range Gas Monitor	□ Yes	□ No
R14A7 - SPING Plant Vent MID Range Gas Monitor	□ Yes	□ No
R14A9 - SPING Plant Vent HIGH Range Gas Monitor	□ Yes	□ No

Use the sping sheet (Attachment 1) to determine which channel to use and enter that value in the downcalc program. (Go to step 6.1.4).

NOTE: R31 AND R32 PROBLEMS USUALLY INDICATE THAT THERE IS A TUBE IN THE STEAM GENERATOR THAT IS LEAKING RADIOACTIVE REACTOR COOLANT SYSTEM WATER INTO THE NO-RADIOACTIVE STEAM PLANT WATER. AS LONG AS THE ARVS AND SAFETY VALVES ARE SHUT, THERE IS NO RELEASE.

6.1.4 R31 and R32 - "A" & "B" Steam Line Monitors. If R31 and R32 ARE NOT on alarm, go to step 6.2 for plant assessments. If R31 or R32 ARE on alarm, determine, from the event 2 printout, if any ARVs or Safety Valves are open. Also, compare R-31/32 readings to EPIP 1-0, Section 5.1. If the associated ARV or Safety Valve for the alarming monitor is open, enter the reading in the DOWNCALC program. (Go to step 6.3.) The event 2 report also lists a computer calculated 15 minute average of Ci/sec released. This can be directly entered into the DOWNCALC program also.

6.1.5 For unmonitored releases from containment, go to EPIP 2-17 to calculate the release rate.

6.2 Part "B" - Plant Assessments

6.2.1 Check R12 - Containment Gas Monitor. If R12 IS NOT on alarm or increasing then the containment atmosphere is clean of radioactivity. If R12 IS on alarm or increasing, then the Reactor Coolant System is leaking water out into the containment atmosphere. Go to step 6.2.2.

6.2.2 Check R9 - Letdown Monitor. If R9 IS on alarm or increasing then the Reactor Fuel is leaking into the Reactor Coolant System water. Go to Step 6.2.4.

6.2.3 If you have reached this step the plant and reactor, most probably, are in a stable condition and no release is occurring. If the plant is in an outage, check with your Technical Group to learn about any unusual conditions that could pose special problems.

6.2.4 Check R29 and R30 - Containment HIGH Range Area Monitors.
Check and compare the readings. If R29 or R30 read >100 R/hr, declare a Site Area Emergency (EAL#2.3.2). If R29 or R30 read >1000 R/hr, declare a General Emergency (EAL#2.3.3). Continue to check R29 and R30 for increases due to degraded plant conditions.

6.3 Dose Calculations Using Personal Computer

6.3.1 If using the computers at RG&E, log in to corporate desktop using "User: Ginna", "Password: lakela".

6.3.1.1 Select the EOF8 icon to start session information.

6.3.1.2 Choose "new session".

6.3.1.3 Enter "session date" in MM/DD/YY format. Enter "session time" in HHMM format.

6.3.1.4 Enter your name.

6.3.1.5 Enter a short description of the event.

6.3.1.6 Enter a reactor shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, do not enter any data.

6.3.1.7 Select the "save" button. A message should appear in the upper right portion of the screen. Click anywhere on the screen to clear the "save" message.

6.3.2 Downwind dose calculations

6.3.2.1 Select the downcalc button along the left side of the screen.

6.3.2.2 Review the release flowrates. Contact Operations personnel to determine current flowrates. On the initial calculation, if Operations is busy, use the normal flowrates in the program so the initial assessment is not delayed. Select the normal or emergency flowrates. Adjust the values as necessary. Select OK when done. Ensure TSC/EOF Dose Assessment and offsite responders are using the same flowrates.

NOTE: TO SCROLL THROUGH FIELDS, PRESS THE TAB KEY.

6.3.2.3 Enter the shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, then press tab to scroll through these 2 fields.

6.3.2.4 Enter the calculation date and the calculation time.

6.3.2.5 To use the <u>last</u> saved values, click on the button labeled "use the last saved values". If new data is to be used, continue.

6.3.2.6 Enter the temperature at 250 feet.

6.3.2.7 Enter the temperature at 33 feet.

NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.

6.3.2.8 Enter the wind speed at 33 feet.

NOTE: IF "WHAT IF" CALCULATIONS ARE DESIRED, REFER TO EPIP 2-17.

6.3.2.9 If a radioiodine value for the containment vent (R10A) or plant vent (R10B) has been calculated using the "ventconc" program, enter the values for the appropriate monitor. If no value has been calculated, the program will use the default radioiodine release rate based on the noble gas concentration.

6.3.2.10 Enter the value (in mR/hr) if R-31 is in alarm condition and is a release path.

6.3.2.11 Enter the value in (in mR/hr) if R-32 is in alarm condition and is a release path.

6.3.2.12 Enter value (in uCi/cc from R-12A) if R-12 is in alarm condition and is a release path.

6.3.2.13 Enter value (in uCi/cc from R-14A) if R-14 is in alarm condition.

6.3.2.14 Enter value (in uCi/cc from R-15A) if R-15 is in alarm condition and is a release path.

6.3.2.15 Enter date and time of data.

6.3.2.16 Enter exposure duration, if the release duration is known. If the release duration is unknown, enter the default of 4 hours.

NOTE: THE SITE BOUNDARY IS 0.3 MILES FROM THE REACTOR.

6.3.2.17 Enter "X" miles to 5.0. If PARs have been issued, ensure that 5 miles is adequate for evacuation. This can be changed in later assessments for other areas of interest.

6.3.2.18 Select the "save and report" button on the bottom of the screen.

6.3.2.19 Review the file name and select OK.

6.3.2.20 Review the data, then print the report and exit.

CAUTION: DO NOT PRINT THE "EMERG DATA FORM" WITH N/A OR ZEROS (0) IN <u>ALL</u> OF THE RELEASE POINTS.

6.3.2.22 Select "emerg data form (part II)". Report will print. Give this report to the Dose Assessment Manager. This report should be reviewed and faxed to RG&E, Wayne County, Monroe County and New York State.

6.3.2.23 Return to step 6.3.2.2 for more downwind calculations. To perform other calculations, select "exit" from the top of the screen.

6.3.3 Survey Team Data Dose Projections

6.3.3.1 Select the sample button from the left hand side of the screen.

6.3.3.2 Enter the shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, then press enter to scroll through these 2 fields.

6.3.3.3 Enter the calculation date and the calculation time.

6.3.3.4 Enter the team number, color or other identification.

6.3.3.5 Enter the team location where the sample was obtained.

6.3.3.6 Enter the date and time that the sample was started.

6.3.3.7 Enter the date and time that the sample was stopped.

6.3.3.8 Enter the units of measurement of the air sample.

6.3.3.9 Enter the air sample flow rate at the start of the sample.

6.3.3.10 Enter the air sample flow rate when the sample was stopped.

6.3.3.11 Enter the count rate (CPM) of the iodine cartridge.

6.3.3.12 Enter the count rate (CPM) of the particulate filter.

6.3.3.13 Enter the background count rate (CPM) in the area that the sample was counted. (This should be performed outside of the plume).

6.3.3.14 The bottom right of the screen will show you:

- radioiodine concentration in the air (in uCi/cc)
- radioactive particulate in the air (in uCi/cc)
- the dose rate (in REM/hr) to a child's thyroid from the radioiodine concentration in the air.

6.3.3.15 Select the "save and report" button on the bottom of the screen.

6.3.3.16 Enter description of reason for calculation and select ok.

6.3.3.17 Review the data, then print the report and exit.

6.3.3.18 Select "exit" from the top of the screen.

6.3.3.19 Select the "backcalc" button along the left side of the screen.

6.3.3.20 Enter the shutdown date and time if the reactor is shutdown. If the reactor is not shutdown, then press enter to scroll through these 2 fields.

6.3.3.21 Enter the calculation date and the calculation time.

6.3.3.22 Enter the temperature at 250 feet.

6.3.3.23 Enter the temperature at 33 feet.

NOTE: THE WIND SPEED INDICATOR AT THE 33 FOOT LEVEL IS DESIGNED TO MEASURE ONLY TO 50 MILES PER HOUR.

6.3.3.24 Enter the wind speed at 33 feet.

6.3.3.25 Enter the team number, color or other identification.

6.3.3.26 Enter the team location where the sample was obtained.

6.3.3.27 Enter the distance (in miles) away from the Ginna Plant.

6.3.3.28 Enter the sample date and sample time.

6.3.3.29 Enter the closed window dose rate that the survey team reported at the sample location. This dose rate will be in R/hr or mR/hr. (DO NOT use the background CPM value of the radioiodine analysis. That was a different screen that you have already completed.)

6.3.3.30 Enter the radioiodine concentration (in uCi/cc) from the SAMPLE program printout.

6.3.3.31 Enter A & B points of interest.

6.3.3.32 You have now projected doses from the point where your survey team collected sample data.

6.3.3.33 Select the "save and report" button on the bottom of the screen.

6.3.3.34 Review the file name and select OK.

6.3.3.35 Review the data, then print the report and exit.

6.3.3.36 Select "report".

6.3.3.37 Select "emerg data form (part II)". Report will print. Give this report to the Dose Assessment Manager. This report should be reviewed and faxed to RG&E, Wayne County, Monroe County and New York State.

6.3.3.38 Return to step 6.3.2 for more survey team calculations. To perform other calculations, select "exit" from the top of the screen.

6.4 Use of RASCAL for determination of exposure due to field samples.

6.4.1 Start RASCAL by clicking on the icon labeled "Shortcut to STDose3". Click OK.

6.4.2 Select "Event Type"

6.4.2.1 Select "Nuclear Power Plant Reactor" then OK.

6.4.3 Select "Event Location"

6.4.3.1 Under Site Names select "Ginna" then OK

6.4.4 Select "Source Term"

6.4.4.1 Select "Effluent Release Concentrations" then OK.

6.4.4.2 Input the measurement location (i.e. plant vent, air ejector).

6.4.4.3 Under Release Period 1, Enter:

- Start date and time
- Stop date and time
- Effluent Flow Rate and select the correct flowrate unit on the right hand side. Also on the right hand side, change the "Effluent Concentrations in:" to the units in the sample results.

6.4.4.4 Enter the radionuclides and the concentrations.

6.4.4.5 Select OK when all of the data has been entered.

6.4.4.6 Select "Release Path".

6.4.4.7 Release height should be zero.

6.4.4.8 Enter the release start date and time.

6.4.4.9 Enter the release end date and time then OK.

6.4.5 Select "Meteorology".

6.4.5.1 Select "Actual Observations and Forecasts" then "Create New".

6.4.5.2 Ensure Station is "GINN" then select "Enter Data".

6.4.5.3 Enter the date, time, wind direction, wind speed, Stability, precipitation and 33 ft temp.

6.4.5.4 Select OK.

6.4.5.5 Select "Create RASCAL Input".

6.4.5.6 Under "Save File as", name the file using the Ginna then a number (i.e. 1,2,3) then OK.

6.4.5.7 Select "View Meteorology"

6.4.5.8 Select "Observations" and review the data to ensure only the center data point has an arrow.

6.4.5.9 Select "Done".

6.4.5.10 Select "Exit".

6.4.5.11 Select "Return"

6.4.5.12 Select OK

6.4.6 Select "Calculate Doses"

6.4.6.1 Under Distance Calculations select

- Close-in + out to 10 miles"
- "Defaults"

6.4.6.2 Under Building Wake correction select "on"

6.4.6.3 Input the date and time that calculations should end (typically 4 hours after release start)

6.4.6.4 Enter case description then OK

6.4.7 Save the case using the button on the bottom left part of the screen

6.4.8 Print Results by using the Print button on the right hand side of the screen.

7.0 ATTACHMENTS

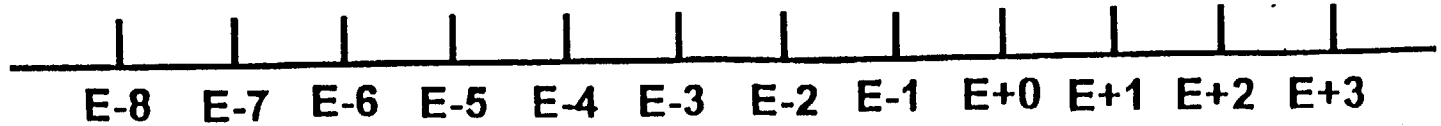
7.1 SPING Functional Ranges

SPING FUNCTIONAL RANGES

12
R-14A9 (High Range)
15

12
R-14A7 (Mid Range)
15

12
R-14A5 (Low Range)
15



uCi/cc

SPING.008

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-9

REV. NO. 5

ADMINISTRATION OF POTASSIUM IODIDE (KI)

RESPONSIBLE MANAGER

05/15/02
EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 5 PAGES

EPIP 2-9

ADMINISTRATION OF POTASSIUM IODIDE (KI)

1.0 PURPOSE

This procedure is to provide guidelines for the administration and use of potassium iodide (KI).

2.0 RESPONSIBILITY

2.1 The Dose Assessment Manager or the Radiation Protection and Chemistry Manager is responsible for determining the need for potassium iodide(KI).

2.2 The administration of potassium iodide shall be performed only after the approval of the Emergency Coordinator.

3.0 REFERENCES

3.1 Developmental References

3.1.1 NCRP Report No. 55 "Protection of the Thyroid Gland in the Event of Releases of Radioiodine."

3.1.2 Federal Register Vol. 47 28158, June 29, 1982.

3.1.3 THYROBLOCK, Instruction Sheet, Wallace Laboratories.

3.1.4 Nuclear Emergency Response Plan

3.1.5 New York State Radiological Emergency Preparedness Plan.

3.2 Implementing References

None.

4.0 PRECAUTIONS

4.1 The use of KI should be considered in conjunction with other available protective options, including respiratory protective devices and limited stay-times.

4.2 The use of potassium iodide (KI) is voluntary.

4.3 KI should not be administered to personnel who know they are allergic to iodide or have dermatitis herpetiformis or hypocomplementenic vasculitis..

4.4 Individuals with multinodular goiter, grave's disease and autoimmune thyroiditis should be treated with caution especially if dosing extends beyond a few days.

4.5 An important factor in obtaining satisfactory blockage of acute radioiodine uptakes is the time of iodide administration after exposure to radioiodine. It is preferable to administer KI before or shortly after the start of exposure to achieve blockage of 90 percent or more. A substantial benefit (e.g. a block of 50%) is attainable only during the first 3 - 4 hours after the start of exposure. However, since the majority of radioiodine has entered the thyroid gland by 10 -12 hours after exposure, little benefit may be expected by blocking beyond this time.

4.6 For chronic radioiodine exposure, KI will, of course, be useful at any time during the exposure and hence should still be administer even if the drug was not given shortly before or after the release of radioactivity.

4.7 Do not administer KI which has passed its expiration date. Check expiration date prior to issuance.

4.8 Distribution of KI to the general public is the responsibility of New York State, and will only be issued to the general public if approved by the New York State Department of Health.

5.0 PREREQUISITES

5.1 Any of the following conditions exist:

5.1.1 Thyroid dose to an individual(s) is projected to be greater than 10 rem.

5.1.2 Plant conditions indicate the potential for a large release of radioiodine.

6.0 ACTIONS

6.1 KI Determination

6.1.1 Dose Assessment Manager or Radiation Protection and Chemistry Manager:

a. Determine projected thyroid dose by using the Thyroid Graph (Attachment 1).

b. If thyroid dose is greater than 10 rem, obtain authorization from the Emergency Coordinator.

****

CAUTION

DO NOT ADMINISTER KI WITHOUT THE APPROVAL OF THE EMERGENCY COORDINATOR.

****

c. A supply of KI tablets is available at the following locations:

1. Technical Support Center
2. Control Room
3. Survey Center
4. Emergency Operations Facility

6.2 KI Administration

6.2.1 Use Thyro-Block Instructions (Attachment 2) as guidance.

6.2.2 Advise all personnel that the use of KI is voluntary.

****

CAUTION

THE ONLY PEOPLE WHO SHOULD NOT TAKE KI ARE PEOPLE WHO KNOW THEY ARE ALLERGIC TO IODIDE.

DO NOT ADMINISTER KI WHICH HAS PASSED ITS EXPIRATION DATE PRIOR TO ISSUANCE.

****

6.2.3 Notify the EOF Recovery Manager of the decision to Administer KI if EOF activated.

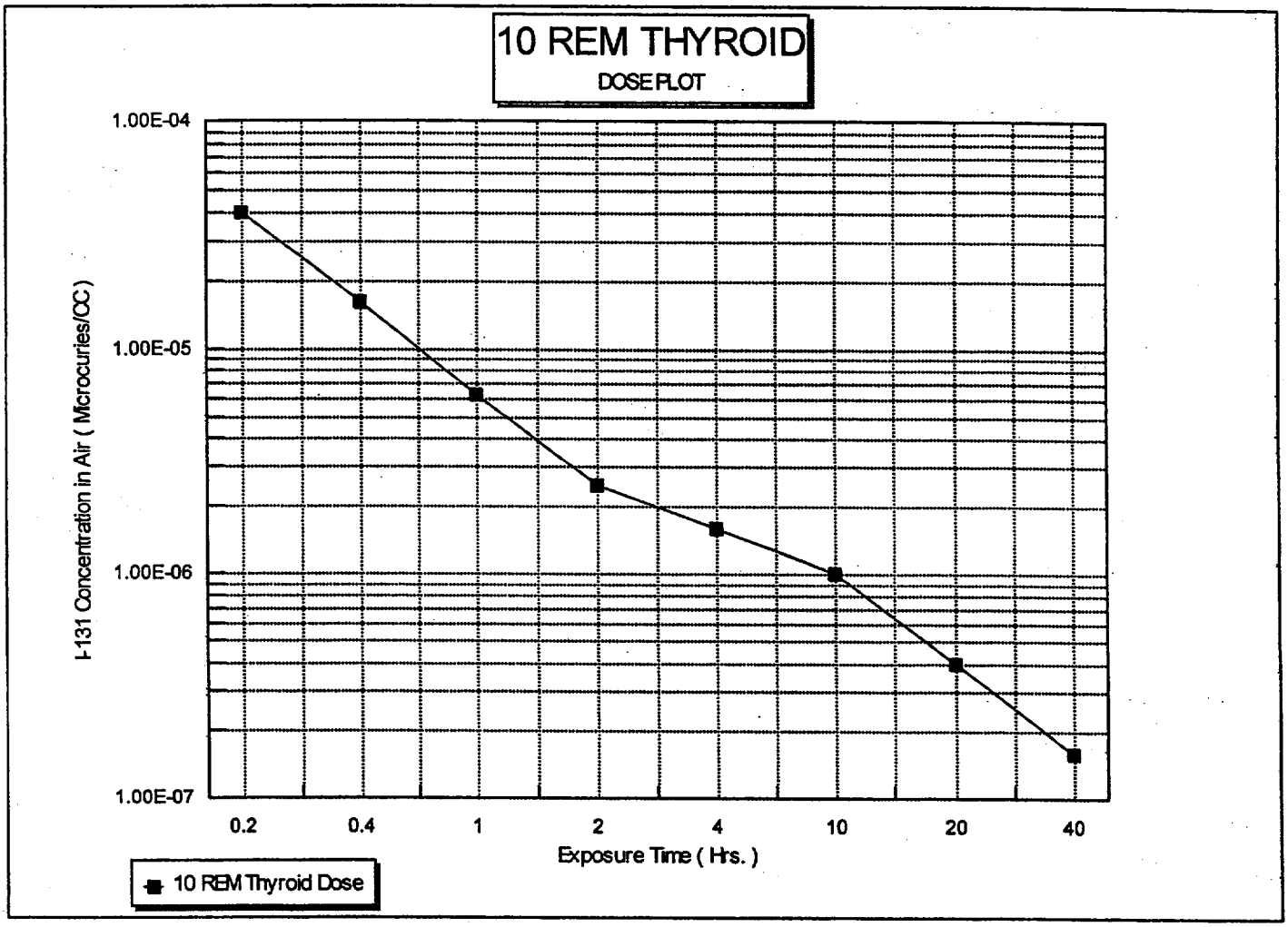
6.2.4 Administer one KI tablet (130 mg. tablet) to each person.

6.2.5 Notify the RG&E Medical Services or the Plant Physician if KI tablets have been issued, and request assistance in follow-up administration of KI and personnel thyroid evaluations. Consider contacting Radiation Management Consultants at (215) 243-2990 for additional medical expertise.

7.0 **ATTACHMENTS**

1. Thyroid Graph.
2. Thyro-Block Instructions.

THYROID GRAPH



THYRO-BLOCK INSTRUCTIONS

THYRO-BLOCK®
TABLETS
(POTASSIUM IODIDE TABLETS, USP)
(Pronounced poe-TASS-e-um EYE-oh-dyed)
(Abbreviated: KI)

TAKE POTASSIUM IODIDE ONLY WHEN PUBLIC HEALTH OFFICIALS TELL YU. IN A RADIATION EMERGENCY, RADIOACTIVE IODINE COULD BE RELEASED INTO THE AIR. POTASSIUM IODIDE (A FORM OF IODINE) CAN HELP PROTECT YOU.

IF YOU ARE TOLD TO TAKE THIS MEDICINE, TAKE IT ONE TIME EVERY 24 HOURS. DO NOT TAKE IT MORE OFTEN. MORE WILL NOT HELP YOU AND MAY INCREASE THE RISK OF SIDE EFFECTS. *DO NOT TAKE THIS DRUG IF YOU KNOW YOU ARE ALLERGIC TO IODIDE.* (SEE SIDE EFFECTS BELOW.)

INDICATIONS

THYROID BLOCKING IN A RADIATION EMERGENCY ONLY.

DIRECTIONS FO USE

Use only as directed by State or local public health authorities int he event of a radiation emergency.

DOSE

Tablets: ADULTS AND CHILDREN 1 YEAR OF AGE OR OLDER: One (!) Tablet once a day. Crush for small children.

BABIES UNDER YEAR OF AGE: One-half (1/2) tablet once a day. Crush first.

Take for 10 days unless directed otherwise by State or local public health authorities.

Store at controlled room temperature between 15° and 30°C (50° to 85°F). Keep container tightly closed and protect from light.

WARNING

Potassium iodide should not be used by people allergic to iodide. Keep out of the reach of children. In case of overdose or allergic reaction, contact a physician or the public health authority.

DESCRIPTION

Each white, round, scored, monogrammed THRO-BLOCK® TABLET contains 130 mg of potassium iodide. Other ingredients: magnesium stearate, microcrystalline cellulose, silica gel, and sodium thiosulfate.

HOW POTASSIUM IODIDE WORKS

Certain forms of iodine help your thyroid gland work right. Most people get the iodine they needs from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

If you take potassium iodide, it will fill up your thyroid gland. This reduces the chance that harmful radioactive iodine will enter the thyroid gland.

WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or antithyroid drug). Pregnant and nursing women and babies and children may also take this drug.

HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium iodide should be taken as soon as possible after public health officials tell you. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amount of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than 10 days.

SIDE EFFECTS

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful no to take more than the recommended dose or take it longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth, and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide. Then, if possible, call a doctor or public health authority for isntructions.

HOW SUPPLIED

THYRO-BLOCK® TABLETS (Potassium Iodide Tablets, USP) are white, round, one side scored, other side debossed 472 WALLACE, each containing 130 mg potassium iodide. Available in bottles of 14 tablets (NDC 0037-0472-20).

WALLACE LABORATORIES
Division of
CARTER-WALLACE
Cranbury, New Jersey 08512'

IN-0472-03 Rev. 5/94

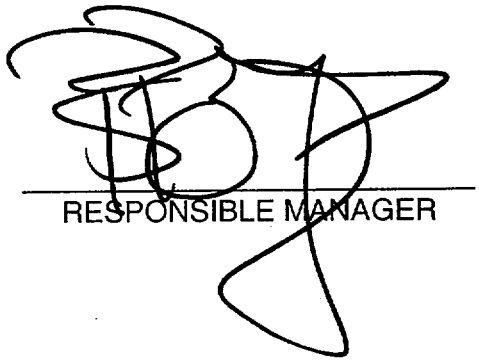
ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE No. EPIP 2-11 REV. NO. 19

ONSITE SURVEYS



RESPONSIBLE MANAGER

05/15/02

EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 32 PAGES

EPIP 2-11

ONSITE SURVEYS

1.0 PURPOSE:

To describe the procedure to be followed for the conduct of onsite radiological surveys.

2.0 RESPONSIBILITY:

2.1 The onsite survey team members are responsible for implementing this procedure.

2.2 The Survey Center Manager or Dose Assessment Manager is responsible for briefing, dispatch and control of the team as described in EPIP 2-7, Management of Emergency Survey Teams.

3.0 REFERENCES:

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.1.2 RP-SUR-POST-LABEL, Radiological Surveys and Area Postings

3.2 Implementing References

3.2.1 EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure

3.2.2 EPIP 2-9, Administration of Potassium Iodide (KI).

3.2.3 EPIP 2-13, Iodine and Particulate Activity Determination from Air Samples.

3.2.4 EPIP 2-7, Management of Emergency Survey Teams.

3.2.5 EPIP 5-2, Onsite Emergency Response Facilities and Equipment Periodic Inventory Checks and Tests.

3.2.6 EPIP 1-11, Survey Center Activation

4.0 PRECAUTIONS:

4.1 If the seal on the Onsite Survey Team footlocker is broken, use the equipment list inside the footlocker to inventory equipment (Equipment list from EPIP 5-2).

4.2 Maintain communications contact at regular intervals with the TSC Radio Operator when performing surveys especially when significant changes to dose rates occur as described in this procedure.

5.0 PREREQUISITES:

None

6.0 ACTIONS:

6.1 **Equipment Check/Team Preparation**

6.1.1 Assemble the following equipment which is not stored in the survey footlocker:

a. Personal thermoluminescent dosimeter (TLD) for each team member.

b. Gilian low volume air sampler with filter holder or equivalent.

Verify the battery charge status by observing the battery voltage displayed on the battery charger. Press the button on the battery charger (for #1, 2, 3, 4, or 5) that corresponds with the air sampler that you are checking.

NOTE: IF AN AIR SAMPLER DOES NOT HAVE THE MINIMUM VOLTAGE LISTED BELOW, IT MAY NOT RUN FOR AN ADEQUATE LENGTH OF TIME. LEAVE THE AIR SAMPLER ON THE CHARGER UNTIL THE REQUIRED VOLTAGE IS REACHED. IF THE AIR SAMPLER HAS BEEN CHARGING FOR GREATER THAN 8 HOURS AND HAS NOT REACHED THE REQUIRED VOLTAGE, REMOVE IT FROM SERVICE.

- A Gilian HFS-113A should read 4.50v or greater on the charger.
- A Gilian HFS-513A should read 5.80v or greater on the charger.
- A Gilian Gilair-5 should read 5.80v or greater on the charger.

c. Eberline RO-20 dose rate meter or equivalent.

d. Eberline RM-25 Frisker or equivalent.

6.1.2 Log information required on the Survey Team Equipment/Team Data Form, Attachment 17, located on each box, and turn in to Survey Center Manager prior to departure.

6.1.3 Check operation of the following equipment using the Equipment Check and Operation Instructions (Attachment 1):

NOTE: IF EQUIVALENT EQUIPMENT IS UTILIZED ENSURE EQUIPMENT CHECK AND OPERATION INSTRUCTIONS ARE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE RADIATION PROTECTION PROCEDURES.

a. Hand-held radio with extra battery pack and 9 AA batteries. (Attachment 1)

NOTE: SURVEY METERS ARE RESPONSE CHECKED PRIOR TO USE, DAILY WHILE IN USE, AND PRIOR TO STORING THEM AFTER USE. USE ATTACHMENT 16 TO RECORD DAILY CHECKS AND PRIOR TO STORING METERS.

a. Eberline RM-25 Frisker (Attachment 2)

c. Eberline Model RO-20 dose rate meter (Attachment 3)

d. Gilian low volume air sampler (Attachment 4)

e. VAS-2 Earmark "Loud Mouth" Voice Amplification System (Attachment 5)

NOTE: THE PLANT HAS 2 FOUR WHEEL DRIVE VEHICLES AVAILABLE FOR ADVERSE WEATHER CONDITIONS. (CONTACT MAINTENANCE MANAGER IN TSC.)

6.1.4 Load survey equipment in equipment bags and back packs and inform Survey Center Manager you are ready for departure. Obtain meteorological and plant status information. Document Team readiness on Survey Team Attachment Form (Attachment 15).

6.1.5 Log time, date and survey team members on survey map.

6.1.6 Establish radio communication with Technical Support Center Radio Operator and advise of teams departure.

6.1.7 When taking air samples, log time, date, flow rate and start time of low volume air sampler on air sample envelopes and RG&E Emergency Survey Team Data Sheet (Attachment 14).

6.1.8 If directed by the Dose Assessment Manager, don protective clothing and full face masks with charcoal filters and VAS-2 Earmark "loud mouth" voice amplifier.

6.2 **Team Briefing**

6.2.1 Survey Center Manager or Dose Assessment Manager brief the Survey Team Members.

6.2.2 Ensure that the briefing covers the following items:

a. Team Identification

b. Communications Equipment and Channel

c. 3-way communications and use of the phonetic alphabet

d. Protective Equipment (including use of KI)

e. Authorized doses

f. Survey Instructions

g. Survey Equipment

h. Type of Data Required

i. Job Safety Briefing

6.2.3 If dose authorization is required, implement EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.

6.2.4 If potassium iodide (KI) administration is required, take one KI tablet at this time in accordance with EPIP 2-9, Administration of Potassium Iodide (KI).

6.3 **Survey**

6.3.1 Perform surveys using the appropriate Survey Instructions (Attachment 6,7,8,9 and 10).

6.3.2 Follow the Survey Route for your team designation (Attachment 11 or 12).

CAUTION

DO NOT ENTER AREAS WHERE RADIATION LEVELS ARE GREATER THAN 2 REM/HR UNLESS DIRECTED BY THE HEALTH PHYSICIST.

THE DOSE LIMITATION OF THE SURVEY TEAM IS LIMITED TO 1 REM (TEDE) UNLESS THE HEALTH PHYSICIST OR EMERGENCY COORDINATOR AUTHORIZES A HIGHER LIMIT.

A ONETIME DOSE LIMIT OF 75 REM (TEDE) MAY BE USED TO SAVE THE LIFE OF AN INDIVIDUAL ON A VOLUNTARY BASIS.

A ONETIME DOSE LIMIT OF 25 REM (TEDE) MAY BE USED TO INSURE EQUIPMENT IS OPERATIONAL OR SECURED IN ORDER TO PREVENT A GREATER POSSIBLE HAZARD TO THE GENERAL PUBLIC.

6.3.3 At each assigned report point, the team should report the following information to the Radio Operator:

a. Location

b. Completed Actions

c. Results of Surveys

NOTE: REMEMBER TO CHECK THE SCALE BEFORE RECORDING READINGS ON A SURVEY MAP OR REPORTING READINGS TO DOSE ASSESSMENT.

d. Request for additional instructions

6.3.4 Upon completion of Survey Route, inform radio operator at Technical Support Center. The Dose Assessment Manager may assign an additional survey route or direct you to return to the Survey Center.

6.3.5 Document route completion on Survey Team Attachment Form (Attachment 15).

6.4 **Decontamination/Sample Return**

6.4.1 Inform Survey Center Manager of team return to the Survey Center.

6.4.2 Perform a personnel frisk of team personnel in accordance with Attachment 8. Document results on Survey Team Attachment Form (Attachment 15).

6.4.3 If any contamination greater than 100 CPM above background is found, contact the Survey Center Manager for decontamination instructions.

6.4.4 Give all air sample filters, survey maps, data records and attachment forms to the Survey Center Manager. Ensure all information is complete and samples are properly labeled.

6.4.5 Dispose of contaminated and potentially contaminated waste in designated containers.

6.4.6 Perform a contamination survey of equipment in accordance with Attachment 8. Re-stock and inventory the Survey Team Equipment Footlocker. Stow equipment in its designated location.

6.4.7 Return radio system, portable air sampler, frisker and dose rate meter to the Survey Center Equipment Area and place on charge as appropriate. Response check survey meter (s) prior to returning to storage. Notify the Survey Center Manager if any meter(s) do not response check properly.

6.4.8 Return dosimeters and sign-out on dosimeter log sheet from EPIP 1-11.

6.4.9 If directed by the Dose Assessment Manager, receive a whole body count to check for internal contamination.

7.0 **ATTACHMENTS:**

EQUIPMENT CHECK AND OPERATING INSTRUCTIONS

1. Radio System
2. Eberline RM-25 Frisker
3. Eberline model RO-20 Dose Rate Meter
4. Gilian Low Volume Air Sampler
5. VAS-2 Earmark "Loud Mouth" Voice Amplification System

SURVEY INSTRUCTIONS

6. General Area Radiation Survey
7. Survey to Determine Presence of Beta Radiation-Plume Survey
8. Contamination Survey
9. Taking Air Samples
10. Changing Filters at Fixed Environmental Stations

11. Survey Route (Onsite East)
12. Survey Route (Onsite West)
13. Onsite Survey Map
14. RG&E Emergency Survey Team Data Sheet
15. Survey Team Attachment Form
16. EPIP Instrument Response Check
17. Survey Team Equipment/Team Data Form

RADIO SYSTEM
(HAND-HELD PORTABLE)

EQUIPMENT CHECK AND OPERATION

1. Remove radio from the charger rack.

2. Switch on the transceiver by turning the power switch/volume control clockwise until it clicks.

3. Adjust the volume by turning the power switch/volume control knob to the desired volume.

NOTE: **CHANNEL IDENTIFICATION IS INDICATED ON THE DISPLAY LOCATED ON THE TOP OF THE RADIO.**

4. Turn the channel selector switch to the General Maintenance frequency.

5. Transmit a test message for a communications check using the 3-way communications protocol given below:

   a. The general procedure for communication on the radio should be as follows:

      1. During a drill or exercise, all information transmitted via radio shall be proceeded with "This is a drill/exercise."

      2. The message should include the name or title of the receiver, name or title of the sender and the message text.

         Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. We are starting our primary route, over."

      3. Message acknowledgment by the receiver to include the name or title of the sender and the title of the acknowledging receiver. The acknowledging receiver should paraphrase or repeat back the message.

         Example: "This is a drill. Alpha Survey Team, this is the Technical Support Center. I understand you are starting your primary route, over."

4. Sender confirmation - confirmation of the acknowledgment.

   Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. That is correct."

2. When communicating alpha-numeric information, such as survey team designation or meter readings, where the sender or receiver may encounter background noise or static, the phonetic alphabet should be used.

3. If the receiver does not understand the message, they are expected to ask the sender to repeat or rephrase the message. If the receiver acknowledges the message incorrectly, the sender should correct the receiver by saying "that is not correct" and repeating the message.

4. Confirmation of the acknowledgment by the sender is imperative. The absence of the confirmation step could result in a mis-communication because the receiver may have misheard the message and repeats back erroneous information. A lack of response by the sender could be interpreted as a silent confirmation that the repeat back is correct.

   NOTE: **THERE MAY BE TIMES THAT TSC OR EOF WILL BE RECEIVING COMMUNICATIONS FROM A TEAM THAT YOU CANNOT HEAR. IF THIS HAPPENS, THE RADIO OPERATOR WILL TELL YOU TO WAIT OR STANDBY. AFTER HE HAS COMPLETED HIS TRAFFIC, HE WILL ASK YOU TO TRANSMIT YOUR INFORMATION.**

6. To transmit: depress the push-to-talk switch on the side of the radio. Speak in a normal voice into the speaker/mike.

7. To receive: release the push-to-talk switch.

8. When you have been directed to secure your survey team, turn the radio off and place it in the charger located in the Survey Center Equipment area.

EBERLINE RM-25 FRISKER

EQUIPMENT CHECK

1. Disconnect power cord from the back of the meter. Ensure "TEST ON" toggle switch is off.

2. Ensure that an HP-260 pancake probe or equivalent is connected to the Detector connector on the front of the instrument.

3. Turn range switch to HV position. Meter should read the high voltage indicated on the calibration sticker.

4. Press Battery Test button on the back, lower left side of the meter. Meter should read in the green Battery Check area.

5. Turn range switch to Alarm position. Set alarm with HV/Alarm toggle switch to desired alarm point.

6. Perform instrument response check. Obtain source from safe and verify meter reading corresponds to reading on attached card. Log on response check log (Attachment 17), whether response check was satisfactory or not, and submit to Survey Center Manager.

7. Turn range switch to OFF when not in use.

EQUIPMENT OPERATIONS

1. Turn range switch to X1.

2. Place response switch in the Slow Response position.

3. Adjust the volume control so that the audio indication (a click) can be heard.

4. Set Alarm to 500 (maximum scale reading).

5. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.

6. All readings must be multiplied by the range switch setting, i.e. (X1, X10, X100, X1K).

7. 3,600 CPM is approximately equal to 1 mrem/hr. Maximum reading is 100,000 CPM or 28 mR/hr.

8. Check battery level frequently when using the meter of battery power.

9. Upon completion of the survey, return meter to the Survey Center Equipment Area and response check. Turn the meter off and return to storage if response check is satisfactory. Notify the Survey Center Manager if the instrument does not response check properly. Unit should be recharged before the next use.

EBERLINE MODEL RO-20 DOSE RATE METER

EQUIPMENT CHECK

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.

2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.

3. If either of these checks are unsatisfactory, turn survey meter in to Survey Center Manager.

4. Turn function switch to *Zero* position. Check that meter reads zero. If not, set it to zero with the Zero knob.

5. Set the function switch to the 5 mR/hr. Range. Obtain response check source from the safe and verify that the meter reading corresponds to the reading on the source card. Use the open window reading. Log on response check log (Attachment 17), whether response check was satisfactory or not, and submit to Survey Center Manager.

6. Turn meter off when not in use.

EQUIPMENT OPERATION

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.

2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.

3. If either of these checks are unsatisfactory, turn survey meter in to Survey Center Manager.

4. Set function switch to the desired range of operation. The switch position selected is the full scale reading of that range.

5. When surveying an area of unknown radiation, always start the survey at the higher scales and move to a lower scale until readings are between 10% and 90% of that scale.

NOTE: **REMEMBER TO CHECK THE SCALE SETTING BEFORE RECORDING READINGS ON A SURVEY MAP OR REPORTING READINGS TO DOSE ASSESSMENT.**

6. For low light conditions, set the *Light* toggle switch to either *On* for continuous illumination or *Momentary* for momentary illumination. When not needed, ensure *Light* switch if returned to the *Off* position to conserve batter power.

7. Upon completion of the survey, return meter to the Survey Center Equipment Area and response check. Turn the meter off and return to storage if the response check is satisfactory. Notify Survey Center Manager if the meter does not response check satisfactorily.

GILIAN HFS-113A AIR SAMPLER , GILIAN HFS-513A AIR SAMPLER
GILIAN GILAIR-5 AIR SAMPLER

EQUIPMENT CHECK OF GILIAN AIR SAMPLERS

1. Perform all sampler checks prior to use as follows:

a. Verify calibration is current by checking the calibration sticker.

NOTE: **THE PARTICULATE FILTER IS INSTALLED WITH THE TEXTURED SIDE FACING OUT. THE SILVER ZEOLITE CARTRIDGE HAS ARROWS ON ITS SIDE TO INDICATE THE DIRECTION OF THE SAMPLE FLOW.**

2. Ensure the sample head is attached to the sampler inlet. Install new filters in the sample head.

OPERATION OF THE GILIAN HFS-113A AND GILIAN HFS-513A

1. Ensure filter cartridge contains a GY-130 Silver Zeolite cartridge and particulate filter. Ensure sample head is connected to the sampler.

CAUTION

MASTER ON/OFF SWITCH MUST BE ON FOR UNIT TO OPERATE. MASTER ON/OFF SWITCH ALSO RESETS TIME DISPLAY.

---

2. At start of the sampling period record start time. PRESS TEST button and record time in digital display and flow of 4.0 LPM on sample envelope and on RG&E Emergency Survey Team Data Sheet, Attachment 14. Turn unit on using ON/OFF switch located to the right of the digital display.

CAUTION

IF A FAULT CONDITION EXISTS, UNIT SHUTS DOWN AFTER 15-30 SECONDS INTO A FAULT CONDITION.

---

3. If the FAULT LED is lit, this was activated by either an under voltage, over current, or over pressure (restricted flow) condition beyond the units capability. The motor stops and the time is latched. By pressing the TEST button, the sample time (in minutes) at which the fault occurred will be displayed indicating a valid sample period.

4. At end of the sampling period, turn pump off using ON/OFF switch located to the right of digital display. Press TEST button, record time in digital display, stop time and all other pertinent information on sample envelope and Attachment 14.

5. Sample volume in liters equals the flow rate in liters per minute multiplied by minutes the sampler operated. The sampler has a fixed flow rate of 4 liters per minute. If the unit was operated for thirty minutes, the sample volume would equal 120 liters (4 x 30 = 120).

6. Handle completed samples in accordance with Attachment 9 "Taking Air Samples".

OPERATION OF THE GILIAN GILAIR-5

1. Turn the power switch to the ON position.

2. Record the start time and the run time on the digital display and a flow of 4.0 LPM on sample envelope and on RG&E Emergency Survey Team Data Sheet, Attachment 14.

3. During use, periodically check the unit to ensure that it does not have a fault condition.

NOTE: A LIT FAULT LED MAY BE CAUSED BY:

- **UNDER VOLTAGE**
- **OVER CURRENT**
- **OVER PRESSURE (RESTRICTED FLOW).**

4. If the FAULT LED comes on during sampling, perform the following:

   a. Check the digital display to determine how long the sample ran.

   b. Determine the fault condition if possible and correct.

   c. If the condition causing the fault is corrected and work is continuing, turn the unit off to reset it, and then restart it. Be sure to add the previous run time to the total run time of the sample.

   If the cause of the fault cannot be determined, remove the unit from service.

5. At the end of the sampling period, look at the digital display and note the total run time of the air sampler. Turn the sampler OFF. Record the run time from the display, stop time and all of the other pertinent information on Attachment 14.

6. Sample volume in liters equals the flow rate in LPM multiplied by the minutes the air sampler was operated. If the unit was operated for thirty minutes, the sample volume would equal 120 liters (4LPM x 30 minutes = 120 liters).

VAS - 2 EARMARK "LOUD MOUTH" VOICE AMPLIFICATION SYSTEM

The "Loud Mouth" System is designed to provide voice amplification for individuals wearing respiratory protection devices.

EQUIPMENT CHECK

Earmark Throat Microphone Model TM-1

1. Figure 1 (attached) shows the proper "at rest" position for the microphone. If it is necessary to reform the spring tension, hold the microphone, starting two inches behind the microphone head, between the thumb and forefinger and bend the cable slightly while progressing down the cable until the end of the spring is reached. Check the diameter of the coil and repeat if necessary. Note that the microphone head should tilt up from a flat surface about 1/4 inch. If necessary, form the spring to give this dimension.

2. Batteries: A 9-volt Alkaline Battery is the required power source. The battery is located in the amplifier unit. To replace the batteries, remove the cover plate to the battery compartment. Pull plastic tab, remove and replace the battery.

   Note: Small terminal (+) in first.

EQUIPMENT OPERATION

1. Ensure microphone cable is securely connected to jack on voice amplifier.

2. The microphone is designed to be located on the right side of the throat (see figure 2). The microphone must lay flat on the neck and press firmly into the throat.

3. Securely fasten amplifier unit to belt.

CAUTION

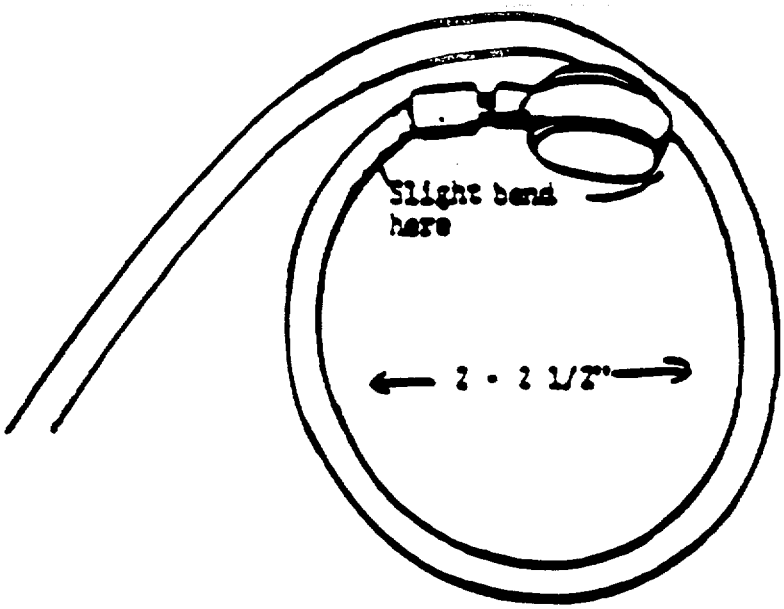
WHEN COMMUNICATING THROUGH RADIO, TELEPHONE, ETC., SPEAK PRECISELY. KEEP SPEAKER AT LEAST 12" FROM THROAT MIC. KEEP THE MEANS OF COMMUNICATION 12" FROM THE THROAT MIC. HOLD MEANS OF COMMUNICATION OFF TO SIDE OF SPEAKER. IF ANY FEEDBACK IS APPARENT, LOWER VOLUME.

---

4. To operate unit, turn volume control clockwise, the TALK slide switch has two (2) positions; up is the standby mode and down is the talk mode. Slide TALK switch to down position to talk. Adjust volume to desired level with VOLUME control.

5. Turn unit off by turning volume control counter clockwise as fast as it will turn. Leave talk switch in the standby position.

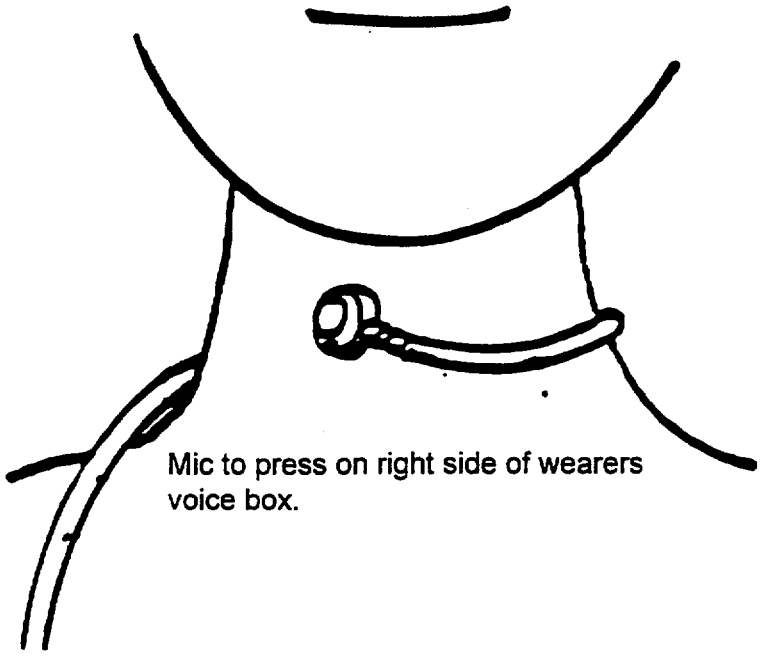
EQUIPMENT CHECK AND OPERATION INSTRUCTIONS



On a flat surface the mic should rest about 1/4" above said surface

When mic is laid on a flat surface it should form a circle 2 to 2 ½ " in distance. Depending on user size. If it has been stretched to form a larger circle the inbuilt spring wire should be reformed to produce the diameters indicated. This insures proper throat pressure for optimum sound quality.

Fig. 1



Mic to press on right side of wearers voice box.

Fig. 2

GENERAL AREA RADIATION SURVEY

1. A general radiation area survey should be conducted while moving between defined survey points, and at the specific survey points.

2. The survey should be conducted using a Eberline RO-20 dose rate meter or equivalent.

3. Normally, radiation readings are taken at 3 feet with the Beta window closed.

4. Record results on a survey map.

****

CAUTION

IF RADIATION LEVELS ARE GREATER THAN 100 MR/HR, COMPLETE THE SURVEY AND RETREAT TO A LOWER DOSE AREA PRIOR TO REPORTING RESULTS TO KEEP YOUR EXPOSURE ALARA.

****

5. If a reading of 1 mr/hr or greater is detected, stop and conduct a survey for Beta radiation in accordance with Attachment 7. Record results on the RG&E Emergency Survey Team Data Sheet, Attachment 14 and immediately report the results of the survey to the Radio Operator.

SURVEY TO DETERMINE PRESENCE OF BETA RADIATION PLUME SURVEY

1. If the General Area Radiation Survey indicates a reading of 1 mr/hr or greater, or if the "plume" is suspected to be in your area, a survey to detect the presence of Beta radiation should be conducted:

2. Using a Eberline RO-20 dose rate meter, conduct the following surveys:

   a. With a meter held at waist level (3 feet) :

      Beta shield open

      Beta shield closed

      Difference #1 = (opened reading - closed reading)

   b. With the meter held at ground level (3 inches)

      Beta shield open

      Beta shield closed

      Difference #2 = (open reading - closed reading)

3. If either difference #1 or difference #2 from Step 2 is positive, this is an indication that Beta radiation is present.

   a. If both difference #1 and #2 are positive, this is an indication that you are in the plume.

   b. If only difference #2 is positive, this is an indication of ground contamination.

4. Record survey results on RG&E Emergency Survey Team Data Sheet, Attachment 14.

5. Report the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.

CONTAMINATION SURVEY

COLLECTING AND COUNTING SMEAR SAMPLES

NOTE: **DO NOT TOUCH METER PROBE TO ANY SURFACE BEING SURVEYED. PROBE CONTAMINATION MAY RESULT.**

BACKGROUND COUNT RATE SHOULD BE BELOW 200 CPM TO BE SENSITIVE ENOUGH TO DETECT LOW LEVELS OF CONTAMINATION.

PERSONNEL FRISK

1. Obtain a RM-25 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over a person (i.e., within ½ inch from the person) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.
7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager if the net count rate is greater than 100 CPM.

DIRECT FRISK SURVEY (OBJECTS)

1. Obtain a RM 25 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over an object or area surface (i.e., within ½ inch from it) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.

6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.

7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.

8. Notify the Survey Center Manager if the net count rate is greater than 250 CPM.

SMEAR SURVEY

1. Obtain cloth smear with adhesive backing mounted on waxed paper.

2. Obtain a RM-25 with a HP-260 pancake probe or equivalent frisker.

3. Check the background count rate.

4. Mark the smears with sequential numbers (e.g., 1,2,3,....).

5. Holding the smear paper between the thumb and index and middle fingers and applying medium pressure, smear an area 100 cm^2 (approximately 4 inches by 4 inches). A 16-inch "S" pattern can also be used.

6. Record the smear location by writing the smear number on the map and circling it.

7. Hold the smear paper within ½ inch of the meter probe until the meter indication stabilizes. This is the gross count in CPM.

8. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.

9. Record the net count as CPM/100 cm^2 in the smears table of the map next to corresponding smear number.

NOTE: **THIS NOTICE DOES NOT APPLY TO ENVIRONMENTAL SMEARS**

10. Notify the Survey Center Manager if the net count rates exceed 1000 CPM/100 cm^2.

11. Return completed contamination surveys and smears to the Survey Center Manager.

TAKING AIR SAMPLES

1. Air samples are drawn using the following equipment:

   a. **LOW VOLUME** - Using a Gilian HFS-113A low volume air sampler draw approximately 120 liters of air through a particulate filter and a GY-130 silver zeolite cartridge. This will take approximately **30 minutes.**

2. Record the sample date, time, location (either survey point number or road intersection), and initials on the sample envelope and on RG&E Emergency Survey Team Data Sheet (Attachment 14).

3. Using clean, disposable gloves, remove the particulate filter and silver zeolite cartridge from the sample holder and place in the sample envelope.

4. Remove the disposable gloves and discard in a plastic bag. Treat as potentially contaminated material.

5. Return the sample to the Survey Center for gross analysis at the completion of your assigned route or when directed by the Dose Assessment Manager.

CHANGING FILTERS AT FIXED ENVIRONMENTAL STATIONS

1. Record the following information on the sample envelope left from the previous filter change:

   a. Date
   b. Time
   c. System Vacuum (inches)
   d. Gas meter reading (cubic feet)
   e. Total hour meter reading (record in column marked "OFF")
   f. Initials of person changing filters

2. Turn pump off.

3. Using clean, disposable gloves, remove the filter holder at the quick disconnect joint.

4. Unscrew the outside retaining ring and remove the particulate filter from the holder and place in the sample envelope.

5. If a charcoal or zeolite cartridge was used, transfer the information from the particulate filter envelope to a new envelope and place the cartridge in the envelope.

   NOTE: **PARTICULATE FILTER IS INSTALLED WITH TEXTURED SIDE FACING OUT. SILVER ZEOLITE CARTRIDGE HAS ARROW ON SIDE TO INDICATE DIRECTION OF SAMPLE FLOW.**

6. Reassemble the filter holder installing a new GY-130 silver zeolite cartridge and a particulate filter.

7. Reconnect the filter holder to the pump at the quick disconnect joint.

8. Remove disposable gloves and place in a plastic bag. Treat as potentially contaminated material.

9. Turn the pump on.

10. Record the following information onto two new envelopes. Mark one envelop "GY-130 silver zeolite".

    a. Station number
    b. Date
    c. Time
    d. System vacuum (inches)
    e. Gas meter reading (cubic feet)
    f. Total hour meter reading (record in the "ON" column)
    g. Initials of person starting sampler

11. Place the new envelopes inside the monitor cabinet.

12. Bring the envelopes containing the removed cartridge and filter to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.

CAUTION

DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

SURVEY ROUTE (ONSITE EAST)

1. Proceed north and east from the Survey Center surveying between the Training Center East building and Deer Creek. (see Attachment 13).
2. Turn south across the lawn and proceed to environmental station #4 and change the filter and cartridge per instructions in Attachment 10.
3. Proceed southeast to Manor House driveway, follow driveway to where it turns north, proceed east out of the trees into orchard.
4. Go through orchard, then turn north and proceed to environmental station #3 and change the filter and cartridge per instructions in Attachment 10.
5. Proceed west across field and through woods to Manor House driveway.
6. Go north on Manor House driveway to the lake shore.
7. Proceed east to environmental station #2 and change the filter and cartridge per instruction in Attachment 10.
8. Proceed west along the lake shore to the plant fence.
9. Proceed along the plant fence to the Guard House.
10. Report to the Radio Operator that the survey route has been completed noting any unusual radiological conditions and are awaiting further instructions.

CAUTION

DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

SURVEY ROUTE (ONSITE WEST)

1. Proceed west from the Survey Center to the plant access road (see Attachment 13).
2. Continue north across the bridge to environmental station #5 and change the filter and cartridge per instructions in Attachment 10.
3. Proceed west along Deer Creek and the parking lot to environmental station #6 and change the filter and cartridge per instructions in Attachment 10.
4. Proceed west approximately 100 yards.
5. Turn north towards the hill, to the northwest corner of the plant fence.
6. Proceed south along the plant fence to environmental station #7 and change the filter and cartridge per instructions in Attachment 10.
7. Continue along the plant fence to the Guard House.
8. Report to Radio Operator that the survey route has been completed noting any unusual radiological conditions and are awaiting further instructions.

GINNA STATION
ON-SITE SURVEY MAP

Date:_____ Time:_____

Onsite East Route: Team Name_____

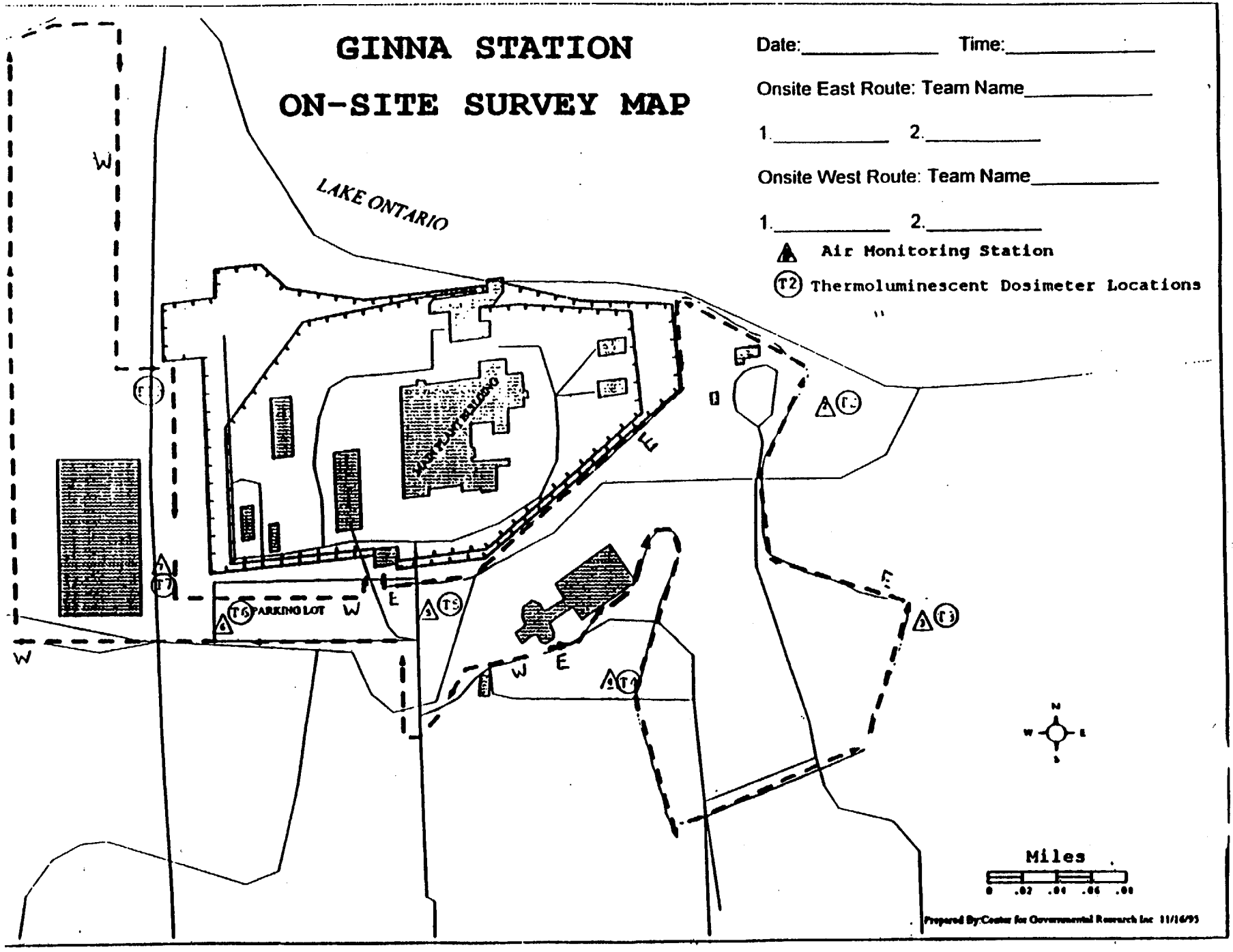
1._____ 2._____

Onsite West Route: Team Name_____

1._____ 2._____

▲ Air Monitoring Station

(T2) Thermoluminescent Dosimeter Locations



RG&E EMERGENCY SURVEY TEAM DATA SHEET

1. DATA FROM: □ RG&E □ WAYNE COUNTY □ MONROE COUNTY

2. A. DATE: _____ B. TIME: _____ C. DATA SHEET NO.: _____
   D. TEAM: _____
   E. LOCATION:

3. A. SURVEY UNITS: (CIRCLE ONE) CPM MICRO-R/HR MR/HR R/HR
   B. SURVEY METER: (CIRCLE ONE) CDV-700 CDV-715 EBERLINE RO-20
   BICRON
   METER NO. _____

4. WAIST LEVEL (3 FEET) READINGS:
   A.. OPEN WINDOW _____ B. CLOSED WINDOW _____

5. GROUND LEVEL (3 INCHES) READINGS:
   A.. OPEN WINDOW _____ B. CLOSED WINDOW _____

6. AIR SAMPLING COLLECTION TIMES:
   A. TIME ON: _____ B. TIME OFF: _____ C. MINUTES RUN: _____

7. AIR SAMPLING FLOWRATES:
   A. LPM START: _____ B. LPM END: _____ C. LPM AVERAGE: _____

8. PARTICULATE CPM: SURVEY METER _____ SERIAL NO. _____
   A. CONTACT: _____ B. 1" _____

9. IODINE CPM:
   A. CONTACT: _____ B. 1" _____

10. BACKGROUND CPM:
    _____

11. COMMENTS AND ADDITIONAL DATA:

□ **THIS IS A DRILL** □ **THIS IS NOT A DRILL**

NOTE: THIS DOES NOT NEED TO BE FILLED OUT FOR TRANSMISSION TO OTHER AGENCIES.

RADIOIODINE:

$$\frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND})\ (4.13\text{ E-8})\ \text{ON CONTACT}}{(\text{MINUTES RUN})\ (\text{LPM AVERAGE})} = \frac{(8.50\text{ E-8})\ @\ 1"}{\text{RADIOIODINE}}$$ _____UCI/CC

PARTICULATE:

$$\frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND})\ (3.47\text{ E-9})\ \text{ON CONTACT}}{(\text{MINUTES RUN})\ (\text{LPM AVERAGE})} = \frac{(9.83\text{ E-9})\ @\ 1"}{\text{PARTICULATE}}$$ _____ UCI/CC

RADIOIODINE DOSE CONVERSION FACTORS (REM/HR PER UCI/CC)

HR	DCF	HR	DCF
1	5.4E5	7	9.3E5
2	6.4E5	8	9.3E5
3	7.3E5	9	1.0E6
4	8.0E5	10	1.1E6
5	8.7E5	11	1.1E6
6	8.7E5	12	1.1E6

CHILD THYROID (CDE) DOSE RATE

$$(\text{UCI/CC})\ (\text{DCF}) = \frac{}{\text{CHILD THYROID}}$$ _____REM/HR

PERFORMED BY: _____ NAME _____ DATE/TIME

CHECKED BY: _____ NAME _____ DATE/TIME

☐ **THIS IS A DRILL** ☐ **THIS IS NOT A DRILL**

SURVEY TEAM ATTACHMENT FORM

SURVEY TEAM:________________________

DATE	TIME	INITIALS	METER TYPE/NO.	REMARKS

USE THIS FORM TO DOCUMENT INFORMATION REGARDING SURVEY TEAM COVERAGE NOT DOCUMENTED ON SURVEY MAPS OR FORMS.

RAD. PROTECTION & CHEMISTRY
Category:
Subject: EPIP Instruments
Date:
Reviewed:

EPIP INSTRUMENT RESPONSE CHECK

DATE: _____

DOSE RATE METERS				
	Model	Serial #	Response Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

FRISKERS				
	Model	Serial #	Response/Alarm Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Survey Team Equipment / Team Data

Team _____ **Cell Phone #** _____ **Date / Time** _____

Team Member#1 _____ **TLD #** _____ **0-1500 mR** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **0-10 R** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **Scott A - ID #** _____	**Team Member#2** _____ **TLD #** _____ **0-1500 mR** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **0-10 R** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **Scott A - ID #** _____

Meter / Frisker Data

Meter	Serial #	Calibration Date	Response Check Y or N	Battery Check	Flow Check
RO -20					
RM-25					
RADECO					
GILIAN					

Comments: _____

_____

_____

ROCHESTER GAS & ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-12 REV. NO. 22

OFFSITE SURVEYS

RESPONSIBLE MANAGER

05/15/02

EFFECTIVE DATE

CATEGORY 1.0

THIS PROCEDURE CONTAINS 49 PAGES

EPIP 2-12

OFFSITE SURVEYS

1.0 PURPOSE

To describe the procedure to be followed for the conduct of offsite radiological surveys.

2.0 RESPONSIBILITY

2.1 The offsite survey team leader is responsible for implementing this procedure.

2.2 The Emergency Survey Center Manager or Dose Assessment Manager is responsible for briefing, dispatch, and control of the team as described in EPIP 2-7, Management of Emergency Survey Teams.

3.0 REFERENCES

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.1.2 RP-SUR-POST-LABEL, Radiological Surveys and Area Postings.

3.1.3 PCN 944253 to EPIP 2-12, position statement subject "Action Level for smears taken by Survey Teams during Emergency Response", dated 5/24/94.

3.2 Implementing References

3.2.1 EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.

3.2.2 EPIP 2-9, Administration of Potassium Iodide (KI).

3.2.3 EPIP 2-13, Iodine and Particulate Activity Determination From Air Samples

3.2.4 EPIP 2-7, Management of Emergency Survey Teams

3.2.6 EPIP 5-1, Offsite Emergency Response Facilities and Equipment Periodic Inventory Checks and Tests

3.2.7 EPIP 5-2, Onsite Emergency Response Facilities and Equipment Periodic Inventory Checks and Tests

4.0 PRECAUTIONS

4.1 If the seal on the offsite survey team footlocker is broken, use the equipment list inside the footlocker to inventory equipment (equipment list from EPIP 5-2 for Ginna Teams, EPIP 5-1 for EOF Teams).

4.2 Maintain communications contact at regular intervals with the Radio Operator when performing surveys, especially when significant changes in dose rates occur as described in this procedure.

5.0 PREREQUISITES

None.

6.0 ACTIONS

6.1 Equipment Check/Team Preparation

NOTE: RAPID DEPLOYMENT SURVEY TEAM USES ATTACHMENT 22.

6.1.1 Assemble the following equipment which is not stored in the survey team footlocker:

a. Personal thermoluminescent dosimeter (TLD) for each team member.

NOTE: EOF Survey Teams do not need Environmental TLDs.

b. Pack of nine environmental TLD's from lead storage container labeled environmental TLDS.

c. Magnetic mount for Motorola GM 300 mobile radio.

d. Gilian low volume air sampler with filter holder or equivalent.

Verify the battery charge status by observing the battery voltage displayed on the battery charger. Press the button on the battery charger (for #1, 2, 3, 4, or 5) that corresponds with the air sampler that you are checking.

NOTE: IF AN AIR SAMPLER DOES NOT HAVE THE MINIMUM VOLTAGE LISTED BELOW, IT MAY NOT RUN FOR AN ADEQUATE LENGTH OF TIME. LEAVE THE AIR SAMPLER ON THE CHARGER UNTIL THE REQUIRED VOLTAGE IS REACHED. IF THE AIR SAMPLER HAS BEEN CHARGING FOR GREATER THAN 8 HOURS AND HAS NOT REACHED THE REQUIRED VOLTAGE, REMOVE IT FROM SERVICE AND GIVE IT TO THE SURVEY CENTER MANAGER.

- A Gilian HFS-113 should read 4.50v or greater on the charger.
- A Gilian HFS-513 should read 5.80v or greater on the charger.
- A Gilian Gilair-5 should read 5.80v or greater on the charger.

e. Eberline RM-25 Frisker with HP-260 pancake probe or equivalent.

f. Eberline RO-20 dose rate meter or equivalent.

g. RADECO H-809C Portable High Volume Air Sampler with filter holder

h. Cellular Mobile Telephone

i. Bicron Micro REM meter (Required by EOF Survey Team ONLY)

6.1.2 Log information required on the Survey Team Equipment/Team Data Form, Attachment 23, located on each box and turn in to Survey Center Manager prior to departure.

6.1.3 Check operation of the following equipment using the Equipment Check and Operation Instructions (Attachments 1-8):

NOTE: IF EQUIVALENT EQUIPMENT IS UTILIZED, ENSURE EQUIPMENT CHECK AND OPERATION INSTRUCTIONS ARE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE RADIATION PROTECTION PROCEDURES.

a. Radio system (Attachment 1)

b. Cellular Mobile Telephone (Attachment 2)

NOTE: SURVEY METERS ARE RESPONSE CHECKED PRIOR TO USE, DAILY WHILE IN USE AND PRIOR TO STORING THEM AFTER USE. USE ATTACHMENT 21 TO RECORD DAILY CHECKS AND PRIOR TO STORING METERS.

c. Eberline RM-25 Frisker (Attachment 3)

d. Eberline Model RO-20 dose rate meter (Attachment 4)

e. Bicron Micro REM meter (Attachment 5) (Required by EOF Survey Team ONLY.)

f. Gilian low volume air sampler (Attachment 6)

g. RADECO H809C high volume air sampler (Attachment 7)

h. Model VAS-2 Earmark "Loud Mouth" Voice Amplification System (Attachment 8)

NOTE: THE PLANT HAS TWO (2) FOUR-WHEEL DRIVE VEHICLES AVAILABLE FOR ADVERSE WEATHER CONDITIONS. (CONTACT MAINTENANCE MANAGER IN THE TSC.)

6.1.4 Obtain transportation and check vehicle for contamination by performing a direct frisk survey in accordance with Attachment 11.

6.1.5 If the vehicle survey indicates surface contamination greater than 250 cpm above background, contact the Survey Center Manager for instructions.

6.1.6 Load survey equipment into vehicle, and inform Survey Center Manager you are ready for departure. Participate in a pre-job brief when meteorological and plant status information are given as per step 6.2. Document readiness on Survey Team Attachment Form (Attachment 20).

6.1.7 Log time, date, and names of survey team members on survey map.

NOTE: EOF SURVEY TEAMS CONTACT EOF DOSE ASSESSMENT RADIO OPERATOR.

6.1.8 Establish radio communication with Technical Support Center Radio Operator and advise of team departure using 3-way communications and the phonetic alphabet where applicable.

6.1.9 When taking air samples, log time, date, flow rate, start time, and initials on air sample envelope(s) and RG&E Emergency Survey Team Data Sheet(s), Attachment 19.

6.1.10 If directed by the Dose Assessment Manager, don protective clothing, full face masks with charcoal filters, and VAS-2 Earmark "Loud Mouth" Voice amplifier.

6.2 **Team Briefing**

6.2.1 Survey Center Manager or the Dose Assessment Manager brief the Survey Team members.

6.2.2 Ensure that the briefing covers the following items:

a. Team identification

b. Communications equipment and channel

c. 3-way communications and use of the phonetic alphabet where applicable

d. Protective equipment (including use of KI)

e. Authorized doses

f. Survey instructions

g. Survey equipment

h. Type of data required

i. Job safety briefing including traffic/vehicle safety

6.2.3 If dose authorization is required, implement EPIP 2-8, Voluntary Acceptance of Emergency Radiation Exposure.

6.2.4 If potassium iodide (KI) administration is required, take one KI tablet at this time in accordance with EPIP 2-9, Administration of Potassium Iodide (KI).

6.3 **Survey**

****

CAUTION

DO NOT ENTER AREAS WHERE RADIATION LEVELS ARE GREATER THAN 2 R/HR UNLESS DIRECTED BY THE HEALTH PHYSICIST.

THE DOSE LIMITATION OF THE SURVEY TEAM IS LIMITED TO 1 REM (TEDE) UNLESS THE HEALTH PHYSICIST OR EMERGENCY COORDINATOR AUTHORIZES A HIGHER LIMIT.
A ONETIME DOSE LIMIT OF 75 REM (TEDE) MAY BE USED TO SAVE THE LIFE OF AN INDIVIDUAL ON A VOLUNTARY BASIS.

A ONETIME DOSE LIMIT OF 25 REM (TEDE) MAY BE USED TO INSURE EQUIPMENT IS OPERATIONAL OR SECURED IN ORDER TO PREVENT A GREATER POSSIBLE HAZARD TO THE GENERAL PUBLIC.

****

NOTE: A YELLOW BEACON (OFFSITE BOXES ONLY) AND SAFETY VESTS ARE INCLUDED IN THE BOXES TO BE USED FOR BETTER VISIBILITY FROM A SAFETY STANDPOINT. THEY ARE NOT REQUIRED BUT ARE RECOMMENDED FOR USE BY TEAMS ON THE ROAD.

6.3.1 Perform surveys using the appropriate Survey Instructions (Attachments 9, 10, 11, 12, 13, 14).

6.3.2 Follow the Survey Route Instructions (Attachments 15, 16, 17, or 18) for your team designation. Drive designated routes at 15 miles/hour.

6.3.3 At each assigned report point the team should report the following information to the Radio Operator:

a. Location
b. Completed Actions
c. Results of Surveys

NOTE: REMEMBER TO CHECK THE SCALE SETTING BEFORE RECORDING READINGS ON A SURVEY MAP OR REPORTING READINGS TO DOSE ASSESSMENT.

d. Request for additional instructions

6.3.4 If radio contact cannot be established, or transmission interference occurs, report by cellular phone using telephone numbers given on the instructions for Radio System - Motorola GM 300 Mobile (Attachment 1) or Cellular Telephone (Attachment 2).

6.3.5 Upon completion of Primary Survey Route, inform the radio operator at Technical Support Center or Emergency Operations Facility. The Dose Assessment Manager will assign an Alternate Survey Route, have the team stand by at a designated location and wait further instructions, or direct the team to return to the Survey Center. Document completion on Survey Team Attachment Form (Attachment 20).

6.4 **Decontamination/Sample Return**

6.4.1 Inform Survey Center Manager when the team returns to the Survey Center.

6.4.2 Perform a contamination survey of team personnel in accordance with Attachment 11 . Document results on Attachment 20.

6.4.3 If any contamination greater than 100 CPM above background is found, contact the Survey Center Manager for decontamination instructions.

6.4.4 Conduct a vehicle contamination survey by direct frisk in accordance with Attachment 11. Document results on Attachment 20.

6.4.5 If any contamination greater than 250 cpm above background is found, contact the Survey Center Manager for decontamination instructions.

6.4.6 Contact Survey Center Manager for instructions for where to return samples, survey maps, data records and attachment forms. Ensure all information is complete and samples are properly labeled.

6.4.7 Dispose of contaminated and potentially contaminated waste in designated containers.

NOTE: EOF SURVEY TEAMS SHALL PERFORM STEPS 6.4.8 THROUGH STEP 6.4.11 AFTER RETURNING TO EOF SURVEY TEAM EQUIPMENT AREA.

6.4.8 Re-stock and inventory the Survey Team Equipment Footlocker. Stow equipment in its designated location.

6.4.9 Return radio system, cellular phones, portable air sampler, radiation count rate meter, and dose rate meter to the Survey Center Equipment Area and place on charge as appropriate. Response check all survey meters prior to returning to storage. Notify Survey Center Manager if any meters do not response check properly.

6.4.10 Return dosimeters and sign-out on dosimeter log sheet.

6.4.11 If directed by the Dose Assessment Manager, receive a whole body count to check for internal contamination.

7.0 ATTACHMENTS

EQUIPMENT CHECK AND OPERATION INSTRUCTIONS

1. Radio system - Motorola GM 300
2. Cellular Telephone
3. Eberline RM-25 Frisker
4. Eberline Model RO-20 Dose Rate Meter
5. Bicron Micro REM Meter
6. Gilian Low Volume Air Sampler
7. RADECO H809C High Volume Air Sampler
8. VAS-2 Earmark "Loud Mouth" Voice Amplification System

SURVEY INSTRUCTIONS

9. General Area Radiation Survey
10. Survey to Determine Presence of BETA Radiation - Plume Survey
11. Contamination Surveys
12. Installation of TLD
13. Taking Air Samples
14. Changing Filters at Fixed Environmental Stations

SURVEY ROUTE INSTRUCTIONS

15. OFFSITE EAST
16. OFFSITE WEST
17. EOF Survey Route #1
18. EOF Survey Route #2
19. RG&E Emergency Survey Team Data Sheet
20. Survey Team Attachment Form
21. EPIP Instrument Response Check
22. Rapid Deployment Survey Team Instructions
23. Survey Team Equipment/Team Data Form

RADIO SYSTEM - MOTOROLA GM 300

Equipment Check:

1. Ensure the vehicle's metal roof is free of ice and snow.

****

CAUTION

DO NOT ATTEMPT TO MOVE THE ANTENNA BY SLIDING IT. YOU WILL SCRATCH THE SURFACE OF THE VEHICLE. ALWAYS REMOVE THE MOUNT BY LIFTING FROM THE REAR!

****

2. Hold the magnetic mount antenna in the palm of your hand with the antenna wire pointed towards the rear of the vehicle and the base of the mount at an angle of about 45 degrees to the vehicle roof.

3. Position the front edge of the mount in the approximate center of vehicle roof.

4. Lower the mount onto the vehicle roof. It will be held in place by the magnetic force.

5. Route the antenna lead wire into the vehicle between the 2nd door jam. With any amount of weather stripping the lead should not be damaged.

6. Route the antenna wire in the vehicle so that it does not interfere with operation of the vehicle.

7. Connect the antenna by inserting the antenna connection into the connector on the back side of the radio and tighten the locking screw in place.

8. Plug the power jack into automobile power receptacle.

9. Turn the ON/OFF-VOLUME knob clockwise (CW) until it clicks. The LED lights will show the last status of the radio and a start-up tone will be heard.

10. Adjust the volume as necessary.

11. Select the desired frequency by depressing the channel select up or down button located on the front left side of the LED display.

12. Normally use Channel #1 (General Maintenance frequency) You are now ready to receive messages from other radios in your system.

13. Transmit a test message for a communications check using the 3-way communications protocol given below:

    a. The general procedure for communication on the radio should be as follows:

        1. During a drill or exercise, all information transmitted via radio shall be proceeded with "This is a drill/exercise."

        2. The message should include the name or title of the receiver, name or title of the sender and the message text.

            Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. We are starting our primary route, over."

        3. Message acknowledgment by the receiver to include the name or title of the sender and the title of the acknowledging receiver. The acknowledging receiver should paraphrase or repeat back the message.

            Example: "This is a drill. Alpha Survey Team, this is the Technical Support Center. I understand you are starting your primary route, over."

        4. Sender confirmation - confirmation of the acknowledgment.

            Example: "This is a drill. Technical Support Center, this is the Alpha Survey Team. That is correct."

    b. When communicating alpha-numeric information, such as survey team designation or meter readings, where the sender or receiver may encounter background noise or static, the phonetic alphabet should be used.

    c. If the receiver does not understand the message, they are expected to ask the sender to repeat or rephrase the message. If the receiver acknowledges the message incorrectly, the sender should correct the receiver by saying "that is not correct" and repeating the message.

d. Confirmation of the acknowledgment by the sender is imperative. The absence of the confirmation step could result in a mis-communication because the receiver may have misheard the message and repeats back erroneous information. A lack of response by the sender could be interpreted as a silent confirmation that the repeat back is correct.

NOTE: **THERE MAY BE TIMES THAT THE TSC OR EOF WILL BE RECEIVING COMMUNICATIONS FROM A TEAM THAT YOU CANNOT HEAR. IF THIS HAPPENS, THE RADIO OPERATOR WILL TELL YOU TO WAIT OR STANDBY. AFTER HE HAS COMPLETED HIS TRAFFIC, HE WILL ASK YOU TO TRANSMIT YOUR INFORMATION.**

14. To transmit, depress the push-to-talk switch on the microphone. Speak in a normal voice across the microphone.

15. To receive, release the push-to-talk switch.

16. If radio contact cannot be made, report using a cellular telephone. Call one of these numbers:

Ginna/TSC Survey Team Coordinator	(716) 771-3128
Survey Center	(716) 771-3331 or (716) 771-3207
EOF Dose Assessment	(716) 262-5799 or (716) 771-2164

17. When you have been directed to secure your survey team, turn the radio off, disconnect the antenna plug from the radio and remove the magnetic mount antenna from the vehicle by lifting up at the rear of the mount.

18. Return the radio and the magnetic mount antenna to the appropriate survey team equipment area.

CELLULAR MOBILE TELEPHONE

Equipment Check

1. Remove telephone from charging unit, if on charger.

2. Turn the unit on by pressing top red button on for several seconds.

   NOTE: EOF SURVEY TEAM(S) CALL DOSE ASSESSMENT RADIO OPERATOR AT 262-5799.

3. Call Survey Center at 771-3331 to test unit.

4. To place a call, press the appropriate number buttons and verify the number displayed is correct.

5. Press the top green button to activate the call.

6. Press the top red button to end the test call.

7. Turn the unit off by pressing the top red button for several seconds unless you will be using the unit soon. This will conserve battery power.

Equipment Operation

NOTE: THE UNIT CAN BE OPERATED BY PLUGGING THE CHARGING CORD INTO A POWER OUTLET IN A VEHICLE OR ON ITS OWN INTERNAL BATTERY. IF POWER IS SUPPLIED BY BATTERY, THE UNIT WILL FUNCTION IN THE STANDBY MODE (POWER ON) FOR APPROXIMATELY 170 HOURS, AND IN THE OPERATING MODE (CALL-CONNECTED) FOR APPROXIMATELY 3 HOURS.

1. Turn the unit on by pressing the top red button for several seconds.

2. To place a call, press appropriate number buttons followed by the top green. button.

3. To receive a call, press the top green button while phone is ringing.

4. To end a call, press the top red button for several seconds.

5. Use the following numbers to report information:

Ginna/TSC Survey Team Coordinator	(716) 771-3128
Survey Center	(716) 771-3331 or (716) 771-3207
EOF Dose Assessment	(716) 262-5799 or (716) 771-2164

6. To turn the unit off, press the top red button for several seconds The display screen on the handset will go blank.

EBERLINE RM-25 FRISKER

Equipment Check

1. Disconnect power cord from back of meter.

2. Ensure that an HP-260 pancake probe or equivalent is connected to the Detector connector on the front of the instrument.

3. Turn range switch to HV position. Meter should read in the high voltage indicated on the calibration sticker.

4. Press Battery Test button on the back, lower left side of the meter. Meter should read in the green Battery Check area.

5. Turn range switch to Alarm position. Set alarm with HV/Alarm toggle switch to desired alarm point.

6. Perform instrument response check. Obtain source and verify meter reading corresponds to reading on attached card. Log on response check log (Attachment 23), whether response check was satisfactory or not, and submit to Survey Center Manager.

7. Turn range switch to OFF when not in use.

Equipment Operation

1. Turn range switch to X1.

2. Place response switch in the Slow Response position.

3. Adjust the volume control so that the audio indication (a click) can be heard.

4. Set Alarm to 500 (maximum scale reading).

5. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.

6. All readings must be multiplied by the range switch setting i.e. (X1, X10, X100, X1K).

7. 3,600 CPM is approximately equal to 1 mR/hr. Maximum reading is 100,000 CPM or 28 mR/hr.

8. Check battery level frequently when using the meter on battery power.

NOTE: EOF TEAMS RETURN EQUIPMENT TO EOF.

9. Upon completion of the survey, return meter to the Survey Center equipment area and response check the meter. Turn the meter off and return to storage if the response check is satisfactory. Notify the Survey Center Manager if the instrument does not response check properly. Unit should be recharged before the next use.

EBERLINE MODEL RO-20 DOSE RATE METER

Equipment Check

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.

2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.

3. If either of these checks are unsatisfactory, turn survey meter into Survey Center Manager.

4. Turn function switch to *Zero* position. Check that meter reads zero. If not, set it to zero with Zero knob.

5. Set the function switch to the 5 mR/hr range. Obtain response check source from the safe and verify that the meter reading corresponds to the reading on the source card. Use the open window reading. Log on response check log (Attachment 23), whether response check was satisfactory or not, and submit to Survey Center Manager.

6. Turn meter off when not in use.

Equipment Operation

1. Turn function switch to *Battery 1* position. Ensure meter reading is in green Battery Check arc.

2. Turn function switch to *Battery 2* position. Ensure meter reading is in green Battery Check arc.

3. If either of these checks are unsatisfactory, return survey meter to Survey Center Manager.

4. Set function switch to the desired range of operation. The switch position selected is the full scale reading of that range.

5. When surveying an area of unknown radiation, always start the survey at the higher scales and move to a lower scale until reading are between 10% and 90% of that scale.

NOTE: **REMEMBER TO CHECK THE SCALE SETTING BEFORE RECORDING READINGS ON A SURVEY MAP OR REPORTING READINGS TO DOSE ASSESSMENT.**

6. For low light conditions, set the *Light* toggle switch to either *On* for continuous illumination or *Momentary* for momentary illumination. When not needed, ensure *Light* switch is returned to the *Off* position to conserve battery power.

7. Upon completion of the survey, return meter to the Survey Center Equipment Area and response check. Turn the meter off and return to storage if the response check is satisfactory. Notify Survey Center Manager if the meter does not response check satisfactorily.

BICRON MICRO REM METER

Equipment Check

1. Turn meter control switch to the BATT position and ensure meter reading is in BAT O.K. band. If not, change batteries with 2 new 9V alkaline batteries. Then if meter reading is not in BAT O.K. band, tag and remove instrument from service.

2. Turn meter control switch to HV position and ensure meter reading is in HV O.K. band. If not, tag and remove instrument from service.

3. Turn meter control switch to appropriate range position. Perform instrument response check and verify that meter reading correspond to reading on attached card. Log meter reading on response check log.

Equipment Operation

1. Turn meter control switch to appropriate range position.

2. Observe reading and multiply reading by the selected switch multiplier.

3. The following are switch multiplier positions: x1000, x100, x10, x1, x.1.

4. Upon completion of the survey, return to the equipment storage area and response check the meter. Turn the meter OFF and return to storage if the response check is satisfactory. Notify the Dose Assessment Manager if the instrument does not response check properly.

GILIAN HFS-113A AIR SAMPLER, GILIAN HFS-513A AIR SAMPLER, GILIAN GILAIR-5 AIR SAMPLER

Equipment Check of Gilian Air Samplers

1. Perform air sampler checks prior to use as follows:

   Verify calibration is current by checking the calibration sticker.

   NOTE: **THE PARTICULATE FILTER IS INSTALLED WITH THE TEXTURED SIDE FACING OUT. THE SILVER ZEOLITE CARTRIDGE HAS ARROWS ON ITS SIDE TO INDICATE THE DIRECTION OF THE SAMPLE FLOW.**

2. Ensure the sample head is attached to the sampler inlet. Install new filters in the sample head.

Operation of the Gilian HFS-113A and Gilian HFS-513A

1. Ensure filter cartridge contains a GY-130 Silver Zeolite cartridge and particulate filter. Ensure sample head is connected to a sampler.

****

CAUTION

MASTER ON/OFF SWITCH MUST BE ON FOR UNIT TO OPERATE. MASTER ON/OFF SWITCH ALSO RESETS TIME DISPLAY.

****

2. At start of sampling period record start time. PRESS TEST button and record time in digital display and flow of 4.0 LPM on sample envelopes and on RG&E Emergency Survey Team Data Sheet Attachment 19.

   Turn unit on using on/off switch located to the right of the digital display.

****

CAUTION

IF A FAULT CONDITION EXISTS, THE UNIT SHUTS DOWN AFTER 15-30 SECONDS.

****

3. If the **FAULT LED** is lit; this was activated by either an undervoltage, overcurrent, or overpressure (restricted flow) condition beyond the units capability. The motor stops and the time is latched. By pressing the TEST button, the time (in minutes) into sampling at which the fault occurred will be displayed indicating a valid sample period.

4. At end of sampling period, turn pump off using ON/OFF switch located to right of digital display. Press TEST button, record time in digital display, stop time and all other pertinent information on sample envelope and Attachment 19.

5. Sample volume in liters equals the flow rate in liters per minute multiplied by minutes the sampler operated. The sampler has a fixed flow rate of 4 liters per minute. If the unit was operated for thirty minutes, the sample volume would equal 120 liters (4 x 30 = 120).

Operation of the Gilian Gilair-5

1. Turn the power switch to the ON position.

2. Record the start time and the run time on the digital display and a flow of 4.0 LPM on sample envelope and on RG&E Emergency Survey Team Data Sheet, Attachment 19.

3. During use, periodically check the unit to ensure that it does not have a fault condition.

   NOTE: A lit **FAULT LED** may be caused by:

   - under voltage
   - over current
   - over pressure (restricted flow)

4. If the **FAULT LED** comes on during sampling, perform the following:

   a. Check the digital display to determine how long the sample ran.
   b. Determine the fault condition if possible and correct.
   c. If the condition causing the fault is corrected and work is continuing, turn the unit off to reset it and then restart it. Be sure to add the previous run time to the total run time of the sample.
   d. If the cause of the fault cannot be determined, remove the unit from service.

5. At the end of the sampling period, look at the digital display and note the total run time of the air sampler. Turn the sampler OFF. Record the run time from the display, stop time and all of the other pertinent information on Attachment 19.

6. Sample volume in liters equals the flow rate in LPM multiplied by the minutes the air sampler was operated. The sampler has a fixed flow rate of 4 Liters Per Minute. If the unit was operated for thirty minutes, the sample volume would equal 120 liters (4 LPM x 30 min. = 120 liters).

RADECO H809C HIGH VOLUME AIR SAMPLER

Equipment Check

1. Ensure power switch on air sampler is off.
2. Ensure battery charger is not plugged in and on the 12 volt position. The black and red clips of battery charger shall not be touching.
3. Separate clips of battery charger and clamp onto cabinet.
4. Connect air sampler power cables to the battery charger, RED clip to positive and BLACK clip to negative.
5. Plug in battery charger.
6. Turn power switch on air sampler on.
7. Check flow meter on air sampler. Flow meter should be off scale high with no filters in place.
8. Turn power switch on air sampler off.
9. Unplug battery charger and disconnect air sampler power cables.

EQUIPMENT OPERATION FROM VEHICLE

1. Ensure power switch on air sampler is OFF.

****

CAUTION

KEEP HANDS AND EQUIPMENT AWAY FROM ROTATING PARTS ON THE VEHICLE ENGINE.

****

2. Connect RED power clip to positive post of vehicle battery and BLACK power clip to vehicle ground (engine block, chassis, etc.).

NOTE: PARTICULATE FILTER IS INSTALLED WITH TEXTURED SIDE FACING OUT. SILVER ZEOLITE CARTRIDGE HAS ARROW ON SIDE TO INDICATE DIRECTION OF SAMPLE FLOW.

3. Ensure the filter assembly contains a GY-130 silver zeolite cartridge and a particulate filter.
4. Turn air sampler on and record the sample date, time, location, and air flow rate (normal is 30 lpm) on a sample envelope and RG&E Emergency Survey Team Data Sheet, Attachment 19.
5. Run sampler for approximately 6 minutes.

RADECO H809C HIGH VOLUME AIR SAMPLER (Cont'd.)

6. Record air flow rate of air sampler in lpm and time sampler is turned off.

7. Turn air sampler off.

8. Disconnect BLACK power clip from vehicle ground, and disconnect RED power clip from positive post of vehicle battery.

VAS-2 EARMARK "LOUD MOUTH" VOICE AMPLIFICATION SYSTEM

The "Loud Mouth" System is designed to provide voice amplification for individuals wearing respiratory protection devices.

Equipment Check

Earmark Throat Microphone Model Tm-1

1. Figure 1 (attached) shows the proper "at rest" position for the microphone. If it is necessary to reform the spring tension, hold the microphone, starting two inches behind the microphone head, between the thumb and forefinger and bend the cable slightly while progressing down the cable until the end of the spring is reached. Check the diameter of the coil and repeat if necessary. Note that the microphone head should tilt up from a flat surface about 1/4 inch. If necessary, form the spring to give this dimension.

2. Batteries: A 9-volt Alkaline Battery is the required power source. The battery is located in the amplifier unit. To replace battery, remove cover plate to battery compartment. Pull plastic tab, remove and replace battery.

   NOTE: Small terminal (+) in first.

Equipment Operation

1. Ensure microphone cable is securely connected to jack on voice amplifier.

2. The microphone is designed to be located on the right side of the throat (see figure 2). The microphone must lay flat on the neck and press firmly into the throat.

3. Securely fasten amplifier unit to belt.

****

CAUTION

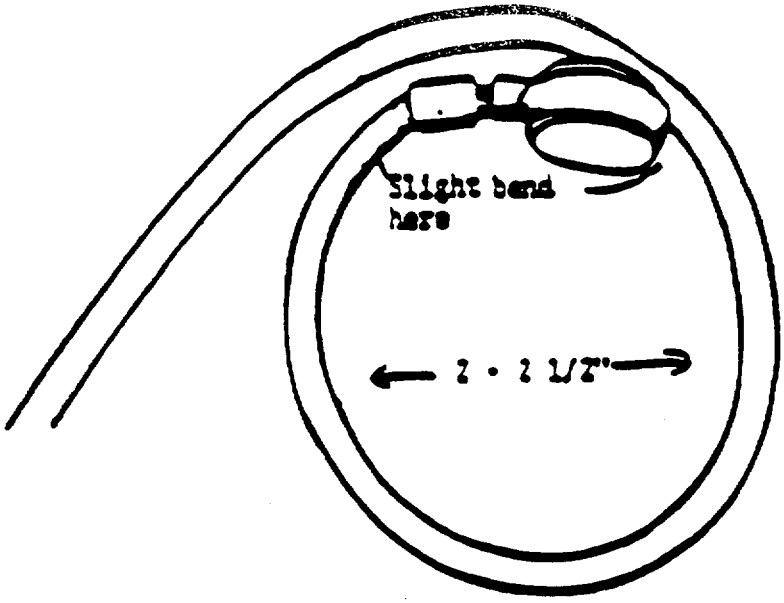
WHEN COMMUNICATING THROUGH RADIO, TELEPHONE, ETC., SPEAK PRECISELY. KEEP SPEAKER AT LEAST 12" FROM THE THROAT MIC. KEEP THE MEANS OF COMMUNICATION 12" FROM THE THROAT MIC. HOLD THE MEANS OF COMMUNICATION OFF TO THE SIDE OF THE SPEAKER. IF ANY FEEDBACK IS APPARENT, LOWER VOLUME.

****

4. To operate unit, turn volume control clockwise. The TALK slide switch has two (2) positions; up is the standby mode, and down is the talk mode. Slide TALK switch to down position to talk. Adjust VOLUME to desired level with volume control.

5. Turn unit off by turning volume control counter clockwise as far as it will turn. Leave talk switch in the standby position.

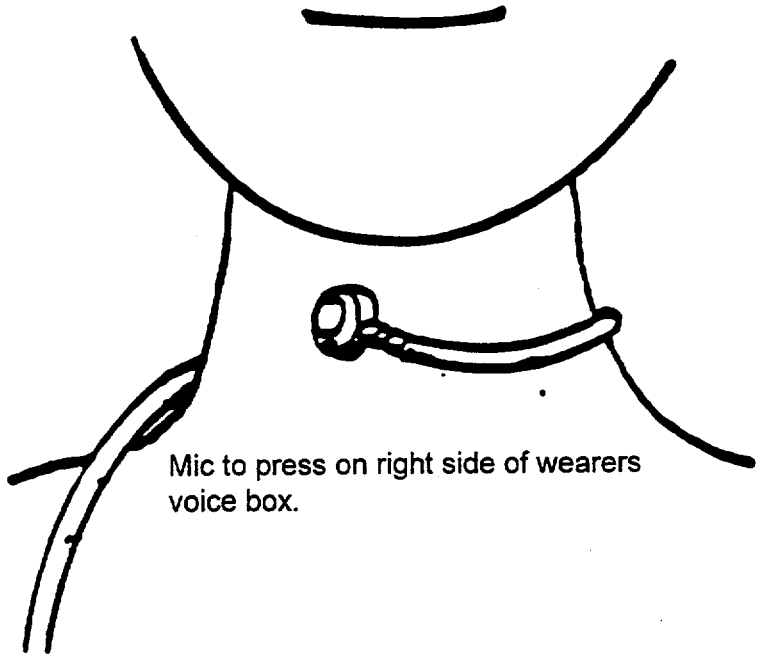
EQUIPMENT CHECK AND OPERATION INSTRUCTIONS



On a flat surface the mic should rest about 1/4" above said surface

When mic is laid on a flat surface it should form a circle 2 to 2 ½ " in distance. Depending on user size. If it has been stretched to form a larger circle the inbuilt spring wire should be reformed to produce the diameters indicated. This insures proper throat pressure for optimum sound quality.

Fig. 1



Mic to press on right side of wearers voice box.

Fig. 2

GENERAL AREA RADIATION SURVEY

1. A general radiation area survey should be conducted while moving between defined survey points, and at the specific survey points.

2. The survey should be conducted using a Eberline RO-20 dose rate meter or equivalent.

3. Normally, radiation readings are taken at 3 feet with the Beta window closed.

4. Record results on a survey map.

****

CAUTION

IF RADIATION LEVELS ARE GREATER THAN 100 MR/HR, COMPLETE THE SURVEY AND RETREAT TO A LOWER DOSE AREA PRIOR TO REPORTING RESULTS TO KEEP YOUR EXPOSURE ALARA.

****

5. If a reading of 1 mr/hr or greater is detected, stop and conduct a survey for Beta radiation in accordance with Attachment 10. Record results on the RG&E Emergency Survey Team Data Sheet, Attachment 19 and immediately report the results of the survey to the Radio Operator.

SURVEY TO DETERMINE PRESENCE OF BETA RADIATION PLUME SURVEY

1. If the General Area Radiation Survey indicates a reading of 1 mr/hr or greater, or if the "plume" is suspected to be in your area, a survey to detect the presence of Beta radiation should be conducted.

2. Using a Eberline RO-20 dose rate meter, conduct the following surveys:

   a. With a meter held at waist level (3 feet):

      Beta shield open

      Beta shield closed
      Difference #1 = (open reading - closed reading)

   b. With the meter held at ground level (3 inches):

      Beta shield open

      Beta shield closed

      Difference # 2 = (open reading - closed reading)

3. If either difference #1 or difference #2 from Step 2 is positive, this is an indication that Beta radiation is present.

   a. If both difference # 1 and # 2 are positive, this an indication that you are in the plume.

   b. If only difference # 2 is positive, this is an indication of ground contamination.

4. Record survey results on RG&E Emergency Survey Team Data sheet, Attachment 19.

5. Report the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.

CONTAMINATION SURVEYS

NOTE: DO NOT TOUCH THE METER PROBE TO ANY SURFACE BEING SURVEYED. PROBE CONTAMINATION MAY RESULT.

The background count rate should be below **200 CPM** to be sensitive enough to detect low levels of contamination.

Personnel Frisk

1. Obtain a RM-25 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over a person (i.e., within ½ inch from the person) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.
7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.
8. Notify the Survey Center Manager, if the net count rate is greater than 100 CPM.

Direct Frisk Survey (Objects)

1. Obtain a RM-25 with a HP-260 pancake probe or equivalent frisker.
2. Check the background count rate.
3. Slowly pass the meter probe over an object or area surface (i.e., within ½ inch from it) moving it at a rate of 1 to 2 inches per second.
4. Listen to the audible count rate and watch the meter for any increases.
5. Resurvey areas showing an increased count rate.
6. When contamination is suspected, hold the detector over that area for 15 seconds to obtain the gross count rate.

7. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.

8. Notify the Survey Center Manager if the net count rate is greater than 250 CPM.

Smear Survey

1. Obtain cloth smears with adhesive backing mounted on waxed paper.

2. Obtain a RM-25 with a HP-260 pancake probe or equivalent frisker.

3. Check the background count rate.

4. Mark the smears with sequential numbers (e.g., 1,2,3,....).

5. Holding the smear paper between the thumb and index and middle fingers and applying medium pressure, smear an area 100 cm^2 (approximately 4 inches by 4 inches). A 16-inch "S" pattern can also be used.

6. Record the smear location by writing the smear number on the map and circling it.

7. Hold the smear paper within ½ inch of the meter probe until the meter indication stabilizes. This is the gross count in CPM.

8. Subtract the background count rate from the gross count rate. This is the net count rate in CPM.

9. Record the net count rate as CPM/100 cm^2 in the smears table of the map next to the corresponding smear number.

NOTE: THIS NOTICE DOES NOT APPLY TO ENVIRONMENTAL SMEARS.

10. Notify the Survey Center Manager if the net count rates exceed 1000 CPM/100 cm^2.

11. Return completed contamination surveys and smears to the Survey Center Manager.

INSTALLATION OF TLD

1. Specific locations for TLD's will be listed on the survey route instructions or will be given by the Dose Assessment Manager.

2. Hammer a nail through non-sealing plastic into a utility pole at the specified location. The nail should be positioned on the pole at head height and facing the site.

   Ensure the TLD window is oriented facing the site.

3. Record the location (either survey point number or road intersections), utility pole number, date, time, and TLD number on the back of the survey map.

TAKING AIR SAMPLES

1. Air samples are drawn using either of the following equipment:

   a. **HIGH VOLUME -** Using a RADECO H809C high volume air sampler or Buck Lapel Air Sampler, draw approximately 180 liters of air through a particulate filter and a GY-130 silver zeolite cartridge. This will take approximately **6 MINUTES.**

   b. **LOW VOLUME -** Using a Gilian HFS-113A low volume air sampler, draw approximately 120 liters of air through a particulate filter and a GY-130 silver zeolite cartridge. This will take approximately **30 MINUTES.**

2. Record the sample date, time, and location (either survey point number or road intersections) on a sample envelope and on RG&E Emergency Survey Team Data sheet, Attachment 19. Take radiation readings as per Attachment 10 and record on Attachment 19.

3. Determine the background radiation level using the Eberline RM-25 Frisker and HP-260 pancake probe or equivalent. Record the reading on Attachment 19. If background reading is greater than 200 CPM, move to lower background area prior to taking readings. If background of 200 cpm cannot be located, contact Dose Assessment for further instructions.

****

CAUTION

IF FILTERS ARE READING OFF SCALE, MOVE PROBE APPROXIMATELY 1" FROM FILTER. REPORT AND LOG DATA AS BEING TAKEN AT 1".

****

4. Using clean disposable gloves, remove the particulate filter and measure the activity level using an Eberline RM-25 Frisker and HP-260 pancake probe or equivalent. DO NOT TOUCH THE PROBE WINDOW TO THE PARTICULATE FILTER. Record the gross cpm reading on Attachment 19 and place the particulate filter in the envelope.

5. Remove the GY-130 silver zeolite cartridge from the sample holder and measure the activity on the inlet side of the cartridge filter. DO NOT TOUCH THE PROBE WINDOW TO THE CARTRIDGE. Record the gross reading on Attachment 19 and place the cartridge in the envelope.

6. Remove the disposable gloves and discard in a plastic bag. Treat as potentially contaminated material.

7. Report the sample collection information from Attachment 19 to the Radio Operator.

NOTE: **DO NOT PERFORM CALCULATIONS UNLESS REQUESTED BY THE DOSE ASSESSMENT MANAGER.**

8. Field calculations of the airborne activity level may be performed as follows:

a. Sample volume in liters equals the flow rate (30 lpm) times the number of minutes the sampler operated

b. Radioiodine (GY-130 cartridge)

****

CAUTION

IF THE CARTRIDGE CONTACT READING IS OFFSCALE, DETERMINE THE IODINE ACTIVITY FOR THE HP-260 PROBE ONE INCH (ONE CARTRIDGE THICKNESS) AWAY FROM THE INLET SIDE OF THE CARTRIDGE, USING EQUATION b.2. OTHERWISE, USE EQUATION b.1.

****

@ contact 1. $\frac{\text{(CPM Sample - CPM Background)(4.13 E-8)}}{\text{(Volume of Sample in Liters)}}$ = _____uCi/cc Radioiodine

@ 1" 2. $\frac{\text{(CPM Sample - CPM Background)(8.50 E-8)}}{\text{(Volume of Sample in Liters)}}$ = _____uCi/cc Radioiodine

c. Particulate

****

CAUTION

IF THE FILTER CONTACT READING IS OFFSCALE, DETERMINE THE PARTICULATE ACTIVITY FOR THE HP-260 PROBE ONE INCH AWAY FROM THE INLET SIDE OF THE FILTER, USING EQUATION c.2. OTHERWISE, USE EQUATION c.1.

****

SURVEY INSTRUCTIONS

@ contact 1. $\frac{\text{(CPM Sample - CPM Background)(3.47 E-9)}}{\text{(Volume of Sample in Liters}}$ = _____uCi/cc Particulate

@ 1" 2. $\frac{\text{(CPM Sample -CPM Background)(9.83 E-9)}}{\text{(Volume in Sample in Liters}}$ = _____uCi/cc Particulate

CHANGING FILTERS AT FIXED ENVIRONMENTAL STATIONS

1. Record the following information on the sample envelope left from the previous filter change:

   a. Date
   b. Time
   c. System Vacuum (inches)
   d. Gas meter reading (cubic feet)
   e. Total hour meter reading (record in column marked "OFF")
   f. Initials of person changing filters

2. Turn pump off.

3. Using clean disposable gloves, remove the filter holder at the quick-disconnect joint.

4. Unscrew the outside retaining ring and remove the particulate filter from the holder and place in the sample envelope.

5. If a charcoal or zeolite cartridge was used, transfer the information from the particulate filter envelope to a new envelope and place the cartridge in the envelope.

   NOTE: PARTICULATE FILTER IS INSTALLED WITH TEXTURED SIDE FACING OUT. SILVER ZEOLITE CARTRIDGE HAS ARROW ON SIDE TO INDICATE DIRECTION OF SAMPLE FLOW.

6. Reassemble the filter holder installing a new GY-130 silver zeolite cartridge and a particulate filter.

7. Reconnect the filter holder to the pump at the quick-disconnect joint.

8. Remove disposable gloves and place in a plastic bag. Treat as potentially contaminated material.

9. Turn the pump on.

10. Record the following information to two new envelopes. Mark one envelop "GY-130 silver zeolite".

    a. Station number
    b. Date
    c. Time
    d. System vacuum (inches)
    e. Gas meter reading (cubic feet)
    f. Total hour meter reading (record in the "ON" column)
    g. Initials of person starting sampler

11. Place the new envelopes inside the monitor cabinet.

12. Bring the envelopes containing the removed cartridge and filter to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE EAST
PRIMARY SURVEY ROUTE

NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.

NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.

1. Travel East on Lake Road from the Training Center driveway to Knickerbocker Road. Place a TLD near the intersection of Lake Road and Knickerbocker Road (2ESE) per instructions in Attachment 12.

2. Continue East on Lake Road to Fisher Road.

3. Go South on Fisher Road to Shepard Road. Place a TLD near the intersection of Fisher Road and Shephard Road (3ESE-2) per instructions in Attachment 12.

4. Continue South on Fisher Road to Seely Road. Place a TLD near the intersection of Fisher Road and Seely Road (4ESE) per instructions in Attachment 12.

5. Continue South on Fisher Road to Kenyon Road (4SE).

6. Go West on Kenyon Road to Furnace Road. Place a TLD near the intersection of Kenyon Road and Furnace Road per instructions in Attachment 12.

7. Continue West on Kenyon Road to Knickerbocker Road (3SSE).

8. Go North on Knickerbocker Road to Brick Church Road (2SE).

9. Place a TLD near the intersection of Knickerbocker Road and Brick Church Road (2SE) per instructions in Attachment 12.

10. Take a high volume air sample at Knickerbocker Road and Brick Church Road (2SE) per instructions in Attachment 13. Report the results.

11. Report to the Radio Operator that the survey route for the Offsite East Primary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE EAST
SECONDARY SURVEY ROUTE

NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.

NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.

1. From the intersection of Brick Church Road and Knickerbocker Road, go North to Lake Road.
2. Go East on Lake Road to the intersection of Lake Road and Route 21 in Pultneyville.
3. Place a TLD near the intersection of Lake Road and Route 21 (6E) per instructions in Attachment 12.
4. Go South on Route 21 to Salmon Creek Road.
5. Place a TLD near the intersection of Salmon Creek Road and Eaton Road (6ESE-1) per instructions in Attachment 12.
6. Take a high volume air sample at Salmon Creek Road and Eaton Road (6ESE-1) per instructions in Attachment 13. Report the results.
7. Go South on Salmon Creek Road to Ridge Road.
8. Place a TLD near the intersection of Salmon Creek Road and Ridge Road per instructions in Attachment 12.
9. Go West on Ridge Road to the intersection of Ridge Road and Knickerbocker Road.
10. Take a high volume air sample at Route 104 and Knickerbocker Road (4SSE) per instructions in Attachment 13. Report the results.
11. Go North on Knickerbocker Road to Brick Church Road (2SE).
12. Report to the Radio Operator that the survey route for the Offsite East Secondary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE EAST
THIRD SURVEY ROUTE
WINDS FROM THE EAST

1. From the intersection of Brick Church Road and Knickerbocker Road travel West to Ontario Center Road.
2. Go South on Ontario Center Road to Plank Road.
3. Go West on Plank Road to Five Mile Line Road.
4. Go North on Five Mile Line Road to Klem Road.
5. Go East on Klem Road to Whiting Road.
6. Go North on Whiting Road to Lake Road.
7. Go East on Lake Road to Knickerbocker Road.
8. Go South on Knickerbocker Road to Brick Church Road.
9. Report to the Radio Operator that the Survey Route for the Offsite East Third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE EAST
THIRD SURVEY ROUTE
WINDS FROM THE WEST

1. From the intersection of Brick Church Road and Knickerbocker Road travel North to Lake Road.
2. Go East on Lake Road to Townline Road.
3. Go South on Townline Road to Ridge Road.
4. Go West on Ridge Road to Route 21.
5. Go South on Route 21 to Walworth-Marion Road.
6. Go West on Walworth-Marion Road(Route 441) to Route 350.
7. Go North on Route 350 to Brick Church Road.
8. Go East on Brick Church Road to Knickerbocker Road.
9. Report to the Radio Operator that the Survey Route for the Offsite East Third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE WEST
PRIMARY SURVEY ROUTE

NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.

NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.

1. Travel West on Lake Road from the Training Center driveway to Lakeside Road.
2. Place a TLD near the intersection of Lake Road and Lakeside Road (2WSW) per instructions in Attachment 12.
3. Go South on Lakeside Road to the intersection of Berg Road.
4. Place a TLD near the intersection of Lakeside Road and Berg Road (3SSW-2) per instructions in Attachment 12.
5. Continue South on Lakeside Road to Ridge Road.
6. Go East on Ridge Road to Route 350.
7. Go North on Route 350 to Brick Church Road.
8. Travel West on Brick Church Road to Slocum Road.
9. Place a TLD near the intersection of Brick Church Road and Slocum Road (2SSW) per instructions in Attachment 12.
10. Take a high volume air sample at Brick Church Road and Slocum Road (2SSW) per instructions in Attachment 13. Report the results.
11. Report to the Radio Operator that the Survey Route for the Offsite West Primary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE WEST - SECONDARY SURVEY ROUTE

NOTE: NUMBERS GIVEN IN PARENTHESES ARE PREDESIGNATED SURVEY POINTS.

NOTE: IF FIXED ENVIRONMENTAL STATION FILTERS ARE REQUESTED TO BE CHANGED, CHANGE THEM PER INSTRUCTIONS IN ATTACHMENT 14.

1. From the intersection of Brick Church Road and Slocum Road travel North to Lake Road.
2. Go West on Lake Road to Route 250 (Webster Road).
3. Place a TLD near the intersection of Lake Road and Route 250 per instructions in Attachment 12.
4. Travel South on Route 250 to Schlegel Road.
5. Go East on Schlegel Road to Salt Road.
6. Place a TLD near the intersection of Schlegel Road and Salt Road (6WSW) per instructions in Attachment 12.
7. Take a high volume air sample at Schlegel Road and Salt Road (6WSW) per instructions in Attachment 13. Report the results.
8. Go South on Salt Road to Route 104.
9. Travel East on Ridge Road to County Line Road.
10. Travel South on County Line Road to Whitney Road.
11. Place a TLD near the intersection of County Line Road and Whitney Road per instructions in Attachment 12.
12. Go East on Whitney Road to Slocum Road.
13. Take a high volume air sample at Whitney Road and Slocum Road per instructions in Attachment 13. Report the results.
14. Continue on Whitney Road to Hennessey Road.
15. Go East on Hennessey Road to Route 350.
16. Go North on Route 350 to Brick Church Road.
17. Go West on Brick Church Road to Slocum Road.
18. Report to the Radio Operator that the Survey Route for the Offsite West Secondary Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE WEST
THIRD SURVEY ROUTE
WINDS FROM THE EAST

1. From the intersection of Brick Church Road and Slocum Road travel North to Lake Road.
2. Go West on Lake Road to Route 250 (Webster Road).
3. Go South on Route 250 to Atlantic Avenue.
4. Go East on Atlantic Avenue to Route 350 (Ontario Center Road).
5. Go North on Route 350 to Paddy Lane.
6. Go West on Paddy Lane to Slocum Road.
7. Go North on Slocum Road to Brick Church Road.
8. Report to the Radio Operator that the Survey Route for the Offsite West third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

OFFSITE WEST
THIRD SURVEY ROUTE
WINDS FROM THE WEST

1. From the intersection of Brick Church Road and Slocum Road travel South to Paddy Lane.
2. Go East on Paddy Lane to Route 350 (Ontario Center Road).
3. Go South on Route 350 to Route 441.
4. Go East on Route 441 to Cory Corners Road.
5. Go North on Cory Corners Road to Ridge Chapel to Ridge Road.
6. Go East on Ridge Road to Salmon Creek Road.
7. Go North on Salmon Creek Road to Lake Road.
8. Go West on Lake Road to Slocum Road.
9. Go South on Lake Road to Brick Church Road.
10. Report to the Radio Operator that the Survey Route for the Offsite West Third Route has been completed. Inform the Radio Operator of any unusual radiological conditions. Inform the Radio Operator that you are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

EOF SURVEY ROUTE #1
LONG ROUTE (EOF-1L)

1. Take 490 East to 590 North. (During rush-hour periods, consider using Culver to Atlantic Avenue as an alternate route.)

2. Take Browncroft Boulevard exit and head east to Creek Street. Head north on Creek Street to Empire Boulevard.

3. At Eastway Plaza, take a high volume air sample per instructions in Attachment 13.

4. From Eastway Plaza, continue north on Bay Road to Lake Road. Turn west on Lake Road and proceed to the Irondequoit Bay Outlet.

5. Head east on Lake Road to Bay Road. Head south on Bay Road to Route 104. Head west on Route 104, cross the Irondequoit Bay Bridge and continue on Route 104 West to the Culver Road exit. Head north on Culver Road to Sea Breeze to the Irondequoit Bay Outlet.

6. Head south on Sea Breeze Expressway to 590 South to Route 404 Webster exit. Head east on Empire Boulevard to Creek Street/Bay Road (Eastway Plaza.)

7. Report to Radio Operator that the EOF Survey Route #1Long has been completed noting any unusual radiological conditions, and are awaiting further instructions.

SHORT ROUTE (EOF-1S)

1. Take East Avenue to Culver Road. Turn north on Culver Road and proceed to Empire Boulevard.

2. At Culver Road and Empire Boulevard, take a high volume air sample as per instructions in Attachment 13.

3. Proceed northwest on Waring Road to Norton Street. Turn west on Norton Street to Portland Avenue.

4. Proceed west on Portland Avenue to North Street. Head South on North Street to East Avenue.

5. Report to Radio Operator that the EOF Survey Route #1Long has been completed noting any unusual radiological conditions, and are awaiting further instructions.

****

CAUTION
DO NOT WAIT IN HIGH RADIATION FIELDS FOR INSTRUCTIONS FROM DOSE ASSESSMENT.

****

EOF SURVEY ROUTE #2 LONG ROUTE (EOF-2L)

1. Take 490 East to Route 441 (Linden Avenue) exit. Head east on Route 441 to Route 250.
2. At Penfair Plaza, take a high volume air sample per instructions in Attachment 13.
3. Continue east on Route 441 to Harris Road. Turn north on Harris Road to Atlantic Avenue (Route 286). Turn west on Atlantic Avenue to Route 250. Turn south on Route 250 and return to Penfair Plaza.
4. Report to Radio Operator that the EOF Survey Route #2Long has been completed noting any unusual radiological conditions, and are awaiting further instructions.

SHORT ROUTE (EOF-2S)

1. Take Monroe Avenue (Route 31) southeast to the 12 Corners.
2. At 12 Corners, take a high volume air sample per instructions in Attachment 13.
3. Head north on Winton Road to Main Street. Turn west on Main Street to Culver Road. Turn south on Culver Road to East Avenue.
4. Report to Radio Operator that the EOF Survey Route #2 Short has been completed noting any unusual radiological conditions, and are awaiting further instructions.

RG&E EMERGENCY SURVEY TEAM DATA SHEET

1. DATA FROM: ☐ RG&E ☐ WAYNE COUNTY ☐ MONROE COUNTY

2. A. DATE: _____ B. TIME: _____ C. DATA SHEET NO.: _____
   D. TEAM: _____
   E. LOCATION:

3. A. SURVEY UNITS: (CIRCLE ONE) CPM MICRO-R/HR MR/HR R/HR
   B. SURVEY METER: (CIRCLE ONE) CDV-700 CDV-715 EBERLINE RO-20 BICRON

   METER NO. _____

4. WAIST LEVEL (3 FEET) READINGS:

   A.. OPEN WINDOW _____ B. CLOSED WINDOW _____

5. GROUND LEVEL (3 INCHES) READINGS:

   A.. OPEN WINDOW _____ B. CLOSED WINDOW _____

6. AIR SAMPLING COLLECTION TIMES:

   A. TIME ON: _____ B. TIME OFF: _____ C. MINUTES RUN: _____

7. AIR SAMPLING FLOWRATES:

   A. LPM START:_____ B. LPM END: _____ C. LPM AVERAGE: _____

8. PARTICULATE CPM: SURVEY METER _____ SERIAL NO. _____

   A. CONTACT: _____ B. 1" _____

9. IODINE CPM:

   A. CONTACT: _____ B. 1" _____

10. BACKGROUND CPM:

    _____

11. COMMENTS AND ADDITIONAL DATA:

☐ **THIS IS A DRILL** ☐ **THIS IS NOT A DRILL**

NOTE: THIS DOES NOT NEED TO BE FILLED OUT FOR TRANSMISSION TO OTHER AGENCIES.

RADIOIODINE:

$$\frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND})\ (4.13\text{ E-8})\ @\ 1\text{" ON CONTACT}}{(\text{MINUTES RUN})\ (\text{LPM AVERAGE})} = \frac{\text{(8.50 E-8)}}{\text{RADIOIODINE}}\ \text{UCI/CC}$$

PARTICULATE:

$$\frac{(\text{CPM SAMPLE} - \text{CPM BACKGROUND})\ (3.47\text{ E-9})\ @\ 1\text{" ON CONTACT}}{(\text{MINUTES RUN})\ (\text{LPM AVERAGE})} = \frac{\text{(9.83 E-9)}}{\text{PARTICULATE}}\ \text{UCI/CC}$$

RADIOIODINE DOSE CONVERSION FACTORS (REM/HR PER UCI/CC)

HR	DCF	HR	DCF
1	5.4E5	7	9.3E5
2	6.4E5	8	9.3E5
3	7.3E5	9	1.0E6
4	8.0E5	10	1.1E6
5	8.7E5	11	1.1E6
6	8.7E5	12	1.1E6

CHILD THYROID (CDE) DOSE RATE

$$(\text{UCI/CC})\ (\text{DCF}) = \frac{}{\text{CHILD THYROID}}\ \text{REM/HR}$$

PERFORMED BY: _____ (NAME) _____ (DATE/TIME)

CHECKED BY: _____ (NAME) _____ (DATE/TIME)

☐ **THIS IS A DRILL** ☐ **THIS IS NOT A DRILL**

SURVEY TEAM ATTACHMENT FORM

SURVEY TEAM:________________________

DATE	TIME	INITIALS	METER TYPE/NO.	REMARKS
USE THIS FORM TO DOCUMENT INFORMATION REGARDING SURVEY TEAM COVERAGE NOT DOCUMENTED ON SURVEY MAPS OR FORMS				

RADIATION PROTECTION & CHEMISTRY
Category:
Subject: EPIP Instruments
Date:
Reviewed:

EPIP INSTRUMENT RESPONSE CHECK

DATE: _____

DOSE RATE METERS				
	Model	Serial #	Response Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

FRISKERS				
	Model	Serial #	Response/Alarm Check Sat. Y or N	Tech Initials
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Rapid Deployment Survey Team Instructions

1. Assemble the following equipment:
   a. Personal thermoluminescent dosimeter (TLD) for each team member
   b. One 0-1500 mR dosimeter and one 0-10 R dosimeter for each team member. Sign in on dosimeter log sheet, Attachment 2 in EPIP 1-11.
   c. Motorola GM 300 mobile radio and magnetic mount antenna.
   d. Eberline RM-25 Frisker with HP-260 pancake probe or equivalent.
   e. Eberline RO-20 dose rate meter or equivalent.
   f. Cellular telephone
   g. Survey map of 10-mile EPZ
   h. Other equipment (eg., PC's, KI tablets, respirators, air sampler, etc.) as determined by Dose Assessment Manager.
2. Source response check survey meters and document on Attachment 21.
3. Obtain transportation and check vehicle for contamination by performing a direct frisk survey. Document results on Attachment 20.
4. Establish radio and cell phone communications with Technical Support Center (TSC) Radio Operator.
5. TSC Radio Operator will provide a team briefing and instructions to the Rapid Deployment Team from the Dose Assessment Manager.
6. The Rapid Deployment Team will be called back to the Survey Center when other survey teams are staffed and deployed to designated survey routes.

Survey Team Equipment / Team Data

Team _____ **Cell Phone #** _____ **Date / Time** _____

Team Member#1 _____ **TLD #** _____ **0-1500 mR** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **0-10 R** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **Scott A - ID #** _____	**Team Member#2** _____ **TLD #** _____ **0-1500 mR** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **0-10 R** **Dosimeter #** _____ **Initial Reading** _____ **Final Reading** _____ **Scott A - ID #** _____

Meter / Frisker Data

Meter	Serial #	Calibration Date	Response Check Y or N	Battery Check	Flow Check
RO -20					
RM-25					
RADECO					
GILIAN					

Comments:

_____

_____

_____

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. EPIP 2-18 REV. NO. 14

CONTROL ROOM DOSE ASSESSMENT

RESPONSIBLE MANAGER

05/15/02

EFFECTIVE DATE

Category 1.0

This procedure contains 7 pages

EPIP 2-18

CONTROL ROOM DOSE ASSESSMENT

1.0 PURPOSE

1.1 The purpose of this procedure is to provide the Control Room personnel a method for performing initial projections of downwind dose rates and doses. Such information is needed to decide upon protective actions to be recommended to limit the exposure of the general public and emergency workers and Emergency Action Level (EAL) classification.

1.2 The initial whole body dose calculation will be limiting with respect to Emergency Classification and Protective Action Recommendation (PARs), based upon an assumed radioiodine to noble gas default ratio of 1 E-4.

2.0 RESPONSIBILITY

2.1 The On-Shift Radiation Protection technician is the primary individual responsible for implementing this procedure.

2.2 Shift Technical Advisors (STAs) and Operations personnel may implement this procedure in the event the On-Shift Radiation protection technician is unavailable during emergency conditions.

3.0 REFERENCES

3.1 Developmental References

3.1.1 Nuclear Emergency Response Plan

3.1.2 EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (1991)

3.1.3 Ginna UFSAR, Chapter 15

3.1.4 Regulatory Guide 1.109

3.2 Implementing References

3.2.1 EPIP 1-0, Ginna Station Event Classification and Evaluation

3.2.2 EPIP 2-1, Protective Action Recommendations

3.2.3 EPIP 2-2, Obtaining Meteorological Data and Forecasts and Their Use In Emergency Dose Assessment

4.0 **PRECAUTIONS**

4.1 If the Ginna Primary Meteorological Tower is unavailable, use EPIP 2-2 to obtain meteorological data.

5.0 **PREREQUISITES**

5.1 The following equipment and data sources are available for use in performing dose projections:

5.1.1 Control Room wind and temperature indications

5.1.2 Plant Process Computer System (PPCS)

5.1.3 Control Room Radiation Monitoring System (RMS) Panel readouts of effluent monitors.

6.0 **ACTIONS**

NOTE: **IF PPCS IS UNAVAILABLE OR THE HIGH RANGE EFFLUENT MONITORS ARE OUT OF SERVICE, USE THE CONTROL ROOM RMS PANEL AND ATTACHMENT 4 TO PERFORM ASSESSMENT.**

6.1 Obtain a printout of EVENT2.

6.1.1 At a PPCS terminal, select "Emergency Plan Menu" from the top menu.

6.1.2 Select "Group Event 2", then select "Report".

NOTE: **IF THE GINNA PRIMARY METEOROLOGICAL TOWER IS UNAVAILABLE, USE EPIP 2-2 TO OBTAIN METEOROLOGICAL DATA.**

6.2 Obtain the following parameters.

250 foot - 33 foot Delta Temperature

_____ F (250 ft temp) - _____ F (33 ft temp) = _____ F

6.3 Using the 250-33 foot delta temp., determine Stability Class.

	-1.74F	-0.65F	
Unstable		Neutral	Stable
-3F -2F		-1F	0F +1F

6.3.1 Stability Class = Unstable Neutral Stable
(Circle one)

6.4 Based on the Stability Class, calculate the Site Boundary Whole Body Dose Rate by completing the appropriate Attachments:

Unstable - Attachment 1

Neutral - Attachment 2

Stable - Attachment 3

6.5 To perform the EPIP 2-18 calculations from the PPCS, select "Emergency Plan Menu" from the top menu.

6.5.1 Select "EPIP 2-18".

6.5.2 The EPIP 2-18 calculation form is displayed. Review the data for each input. Your review should ensure that shine from radiation sources or instrument malfunctions are not affecting the quality of the data. When the data has been verified as being valid, select "verify" for each effluent release point.

6.5.3 When the calculation has been verified, select the printer icon and print the report. Sign the report as the person completing the form. Then, have the Shift Supervisor review your calculation.

7.0 **ATTACHMENTS**

1. Unstable - Stability Class
2. Neutral - Stability Class
3. Stable - Stability Class
4. RMS Conversion Factors

Stability Class = UNSTABLE

NOTE: **The numbers in parenthesis refer to the line numbers on the Event 2 reports.**
NOTE: **If PPCS or SPING(s) are out of service, calculate μci/cc for 4A, 4B or 4C respectively using Attachment 4.**

	250 ft. temp.		33 ft. temp.		Delta T
1. Verify Stability Class	_____	-	_____	=	_____

2. Determine the 33 ft. Level Wind Speed _____ MPH

3. Determine which of the following monitors are on "ALARM" and providing a "RELEASE" path.

	ALARM (Yes/No)
3A) R-12 Containment Vent Gas (during CV purge "ONLY")	Yes No if yes go to 4A
3B) R-14 Plant Vent	Yes No if yes go to 4B
3C) R-15 Air Ejector Vent	Yes No if yes go to 4C
3D) R-31/32 "A/B" Steam Line Radiation Monitor	Yes No if yes go to 4D and 4E

4. Dose Assessment Calculation at the Site Boundary

4A) R-12 ALARM Assessment. Use R12A7 unless >10uCi/cc, then use R12A9.

[uCi/cc] X 1.72E+2 =

[MPH] _____ mR/hr

4B) R-14 ALARM Assessment. Use R14A7 (30) unless >10uCi/cc, then use R14A9.

[uCi/cc] X 8.61E+2 =

[MPH] _____ mR/hr

4C) R-15 ALARM Assessment. Use R15A7 (33) unless >10uCi/cc, then use R15A9.

[uCi/cc] X 6.73E+0 =

[MPH] _____ mR/hr

4D) R-31/32 ALARM Assessment. Use R-31/32 whichever is HIGHER

Number of ARV's OPEN (max. 1 per associated faulted steam generator)

[mR/hr] X [ ] X 4.10E+0 =

[MPH] _____ mR/hr

4E) R-31/32 ALARM Assessment. Use R-31/32 whichever is HIGHER

Number of Safeties OPEN (max. 4 per associated faulted steam generator)

[mR/hr] X [ ] X 8.16E+0 =

[MPH] _____ mR/hr

4F) **TOTAL SITE BOUNDARY DOSE RATE** (Total of 4A thru 4E) _____ mR/hr
(Refer to EPIP 1-0, Initiating Condition:Effluent Releases for EAL Criteria)

4G) **TOTAL PROJECTED EXPOSURE**Total from 4F X Duration (if unknown use 4 hrs)

_____ mR/hr X _____ hrs = _____ mR (Refer to EPIP 2-1 for PARS)

4H) Person Completing Form_____ Shift Supervisor_____ Date/Time_____

Stability Class = NEUTRAL

NOTE: **The numbers in parenthesis refer to the line numbers on the Event 2 reports.**
NOTE: **If PPCS or SPING(s) are out of service, calculate μci/cc for 4A, 4B or 4C respectively using Attachment 4.**

	250 ft. temp.		33 ft. temp.		Delta T
1. Verify Stability Class	_____	-	_____	=	_____

2. Determine the 33 ft. Level Wind Speed _____ MPH

3. Determine which of the following monitors are on "ALARM" and providing a "RELEASE" path.

	ALARM (Yes/No)
3A) R-12 Containment Vent Gas (during CV purge "ONLY")	Yes No if yes go to 4A
3B) R-14 Plant Vent	Yes No if yes go to 4B
3C) R-15 Air Ejector Vent	Yes No if yes go to 4C
3D) R-31/32 "A/B" Steam Line Radiation Monitor	Yes No if yes go to 4D and 4E

4. Dose Assessment Calculation at the Site Boundary

4A) R-12 ALARM Assessment. Use R12A7 unless >10uCi/cc, then use R12A9.

$$\frac{[\ \text{uCi/cc}\ ]}{[\ \text{MPH}\ ]} \times 9.65E{+}2 = \_\_\_\_\_\ \text{mR/hr}$$

4B) R-14 ALARM Assessment. Use R14A7 unless >10uCi/cc, then use R14A9.

$$\frac{[\ \text{uCi/cc}\ ]}{[\ \text{MPH}\ ]} \times 4.84E{+}3 = \_\_\_\_\_\ \text{mR/hr}$$

4C) R-15 ALARM Assessment. Use R15A7 unless >10uCi/cc, then use R15A9.

$$\frac{[\ \text{uCi/cc}\ ]}{[\ \text{MPH}\ ]} \times 3.78E{-}{+}1 = \_\_\_\_\_\ \text{mR/hr}$$

4D) R-31/32 ALARM Assessment. Use R-31/32 whichever is HIGHER

Number of ARV's OPEN (max. 1 per associated faulted steam generator)

$$\frac{[\ \text{mR/hr}\ ] \times [\ \ ]}{[\ \text{MPH}\ ]} \times 2.30E{+}1 = \_\_\_\_\_\ \text{mR/hr}$$

4E) R-31/32 ALARM Assessment. Use R-31/32 whichever is HIGHER

Number of Safeties OPEN (max. 4 per associated faulted steam generator)

$$\frac{[\ \text{mR/hr}\ ] \times [\ \ ]}{[\ \text{MPH}\ ]} \times 4.59E{+}1 = \_\_\_\_\_\ \text{mR/hr}$$

4F) **TOTAL SITE BOUNDARY DOSE RATE** (Total of 4A thru 4E) _____ mR/hr
(Refer to EPIP 1-0, Initiating Condition: Effluent Releases for EAL Criteria)

4G) **TOTAL PROJECTED EXPOSURE**Total from 4F X Duration (if unknown use 4 hrs)

_____ mR/hr X _____ hrs = _____ mR (Refer to EPIP 2-1 for PARS)

4H) Person Completing Form_____ Shift Supervisor_____ Date/Time_____

Stability Class = STABLE

NOTE: **The numbers in parenthesis refer to the line numbers on the Event 2 reports.**
NOTE: **If PPCS or SPING(s) are out of service, calculate μci/cc for 4A, 4B or 4C respectively using Attachment 4.**

1. Verify Stability Class — 250 ft. temp. _____ - 33 ft. temp. _____ = Delta T _____

2. Determine the 33 ft. Level Wind Speed _____ MPH

3. Determine which of the following monitors are on "ALARM" and providing a "RELEASE" path.

	ALARM (Yes/No)
3A) R-12 Containment Vent Gas (during CV purge "ONLY")	Yes No if yes go to 4A
3B) R-14 Plant Vent	Yes No if yes go to 4B
3C) R-15 Air Ejector Vent	Yes No if yes go to 4C
3D) R-31/32 "A/B" Steam Line Radiation Monitor	Yes No if yes go to 4D and 4E

4. Dose Assessment Calculation at the Site Boundary

4A) R-12 ALARM Assessment. Use R12A7 unless >10uCi/cc, then use R12A9.

$$\frac{[\ \text{uCi/cc}\ ] \times 1.78E{+}3}{[\ \text{MPH}\ ]} = \_\_\_\_\_ \text{ mR/hr}$$

4B) R-14 ALARM Assessment. Use R14A7 unless >10uCi/cc, then use R14A9.

$$\frac{[\ \text{uCi/cc}\ ] \times 8.94E{+}3}{[\ \text{MPH}\ ]} = \_\_\_\_\_ \text{ mR/hr}$$

4C) R-15 ALARM Assessment. Use R15A7 unless >10uCi/cc, then use R15A9.

$$\frac{[\ \text{uCi/cc}\ ] \times 6.99E{+}1}{[\ \text{MPH}\ ]} = \_\_\_\_\_ \text{ mR/hr}$$

4D) R-31/32 ALARM Assessment. Use R-31/32 whichever is HIGHER (max. 1 per associated faulted steam generator)

$$\frac{[\ \text{mR/hr}\ ] \times [\ \text{Number of ARV's OPEN}\ ] \times 4.25E{+}1}{[\ \text{MPH}\ ]} = \_\_\_\_\_ \text{ mR/hr}$$

4E) R-31/32 ALARM Assessment. Use R-31/32 whichever is HIGHER

$$\frac{[\ \text{mR/hr}\ ] \times [\ \text{Number of Safeties OPEN (max. 4 per associated faulted steam generator)}\ ] \times 8.48E{+}1}{[\ \text{MPH}\ ]} = \_\_\_\_\_ \text{ mR/hr}$$

4F) **TOTAL SITE BOUNDARY DOSE RATE** (Total of 4A thru 4E) _____ mR/hr
(Refer to EPIP 1-0, Initiating Condition:Effluent Releases for EAL Criteria)

4G) **TOTAL PROJECTED EXPOSURE**Total from 4F X Duration (if unknown use 4 hrs)

_____ mR/hr X _____ hrs = _____ mR (Refer to EPIP 2-1 for PARS)

4H) Person Completing Form_____ Shift Supervisor_____ Date/Time_____

RMS Conversion Factors

1. R-12 Conversion (during CV purge "ONLY")

R-12 Reading in CPM	Conversion Factor		Reading in µCi/cc
	5.6E-8 $\frac{\mu Ci/cc}{CPM}$	=	

2. R-14 Conversion

R-14 Reading in CPM	Conversion Factor		Reading in µCi/cc
	5.6E-8 $\frac{\mu Ci/cc}{CPM}$	=	

3. R-15 Conversion

R-15 Reading in CPM	Conversion Factor		Reading in µCi/cc
	5.0E-8 $\frac{\mu Ci/cc}{CPM}$	=	

NOTE: Use the converted value for R-12A, R-14A and R-15A values on the applicable Attachment (Unstable, Neutral or Stable).

NOTE: The maximum reading that can be used for R-12, R-14 or R-15 is 1E7 cpm.